Health Systems in Transition
Vol. 23 No. 2 2021

# Croatia
## Health system review

Aleksandar Džakula
Dorja Vočanec
Maja Banadinović
Maja Vajagić
Karmen Lončarek
Iva Lukačević Lovrenčić
Dagmar Radin
Bernd Rechel

PUBLIC HEALTH HUB
UNIVERSITY OF ZAGREB SCHOOL OF MEDICINE
ANDRIJA ŠTAMPAR SCHOOL OF PUBLIC HEALTH
European Observatory on Health Systems and Policies
a partnership hosted by WHO

Bernd Rechel (Editor) and Anna Maresso (Series Coordinator)
were responsible for this HiT

## Editorial Board

# Health Systems in Transition

# Croatia

## Health System Review 2021


**Aleksandar Džakula**

Andrija Štampar School of Public Health, University of Zagreb, School of Medicine

**Dorja Vočanec**

Andrija Štampar School of Public Health, University of Zagreb, School of Medicine

**Maja Banadinović**

Andrija Štampar School of Public Health, University of Zagreb, School of Medicine

**Maja Vajagić**

Croatian Health Insurance Fund

**Karmen Lončarek**

Rijeka University Hospital Centre

**Iva Lukačević Lovrenčić**

Andrija Štampar School of Public Health, University of Zagreb, School of Medicine

**Dagmar Radin**

University of Zagreb, Faculty of Political Science

**Bernd Rechel**

European Observatory on Health Systems and Policies


The European Observatory on Health Systems and Policies supports and promotes evidence-based health policy-making through comprehensive and rigorous analysis of health systems in Europe. It brings together a wide range of policy-makers, academics and practitioners to analyse trends in health reform, drawing on experience from across Europe to illuminate policy issues.

The Observatory is a partnership, hosted by WHO/Europe, which includes other international organizations (the European Commission); national and regional governments (Austria, Belgium, Finland, Ireland, Norway, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the Veneto Region of Italy (with Agenas)); other health system organizations (the French National Union of Health Insurance Funds (UNCAM), the Health Foundation); and academia (the London School of Economics and Political Science (LSE) and the London School of Hygiene & Tropical Medicine (LSHTM)). The Observatory has a secretariat in Brussels and it has hubs in London (at LSE and LSHTM) and at the Berlin University of Technology.

**KEYWORDS:**

DELIVERY OF HEALTH CARE
EVALUATION STUDIES
FINANCING, HEALTH
HEALTH CARE REFORM
HEALTH SYSTEM PLANS – organization and administration
CROATIA



Suggested citation:

Džakula A, Vočanec D, Banadinović M, Vajagić M, Lončarek K, Lukačević Lovrenčić I, Radin D, Rechel B. Croatia: Health system review. *Health Systems in Transition,* 2021; 23(2): pp.i–146.

**Print ISSN 1817-6127 Vol. 23 No. 2**
**Web ISSN 1817-6119 Vol. 23 No. 2**

# CONTENTS

# PREFACE

The Health Systems in Transition (HiT) series consists of country-based reviews that provide a detailed description of a health system and of reform and policy initiatives in progress or under development in a specific country. Each review is produced by country experts in collaboration with staff at the North American Observatory on Health Systems and Policies and the European Observatory on Health Systems and Policies. In order to facilitate comparisons between countries, reviews are based on a template prepared by the European Observatory, which is revised periodically. The template provides detailed guidelines and specific questions, definitions and examples needed to compile a report.

HiTs seek to provide relevant information to support policy-makers and analysts in the development of health systems in Europe and other countries. They are building blocks that can be used to:

- learn in detail about different approaches to the organization, financing and delivery of health services, and the role of the main actors in health systems;
- describe the institutional framework, process, content and implementation of health care reform programmes;
- highlight challenges and areas that require more in-depth analysis;
- provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in different countries; and
- assist other researchers in more in-depth comparative health policy analysis

Compiling the reviews poses a number of methodological problems. In many countries there is relatively little information available on the health system and the impact of reforms. Due to the lack of a uniform data source, quantitative data on health services are based on a number of different

sources, including data from national statistical offices, the Organisation for Economic Co-operation and Development (OECD), the International Monetary Fund (IMF), the World Bank's World Development Indicators and any other relevant sources considered useful by the authors. Data collection methods and definitions sometimes vary, but typically are consistent within each separate review.

A standardized review has certain disadvantages because the financing and delivery of health care differ across countries. However, it also offers advantages because it raises similar issues and questions. HiTs can be used to inform policy-makers about experiences in other countries that may be relevant to their own national situations. They can also be used to inform comparative analysis of health systems. This series is an ongoing initiative and material is updated at regular intervals.

Comments and suggestions for the further development and improvement of the HiT series are most welcome and can be sent to contact@obs.who.int.

HiTs and HiT summaries are available on the Observatory's website (https://eurohealthobservatory.who.int).

# ACKNOWLEDGEMENTS

The Health Systems in Transition (HiT) profile on Croatia was co-produced by the European Observatory on Health Systems and Policies and the Andrija Štampar School of Public Health of the University of Zagreb, School of Medicine, in Croatia, which is a member of the Health Systems and Policy Monitor (HSPM) network. The HSPM is an international network that works with the Observatory on Country Monitoring. It is made up of national counterparts that are highly regarded at national and international level and have particular strengths in the areas of health systems, health services, public health and health management research. They draw on their own extensive networks in the health field and their track record of successful collaboration with the Observatory to develop and update the HiT.

This 2021 edition was written by Aleksandar Džakula, Dorja Vočanec, Maja Banadinović, Maja Vajagić, Karmen Lončarek, Iva Lukačević Lovrenčić and Dagmar Radin. It was edited by Bernd Rechel (European Observatory on Health Systems and Policies). The basis for this edition was the previous HiT on Croatia, which was published in 2014, written by Aleksandar Džakula, Nika Pavić, Karmen Lončarek and Katarina Sekelj-Kauzlarić, and edited by Anna Sagan. The 2021 edition has been developed within the Public Health Hub programme at the Andrija Štampar School of Public Health, University of Zagreb, School of Medicine.

The European Observatory on Health Systems and Policies and the Andrija Štampar School of Public Health, University of Zagreb, School of Medicine, are grateful to Ana Ivičević Uhernik (Croatian Institute of Public Health), Miroslav Mastilica (Andrija Štampar School of Public Health, University of Zagreb, School of Medicine), Iva Pejnovic Franelic (WHO Country Office), Dubravka Pezelj Duliba (Croatian Health Insurance Fund), and Eileen Rocard (OECD) for reviewing the report. The authors are also grateful to everyone at the Ministry of Health for invaluable comments on an earlier draft of the manuscript. Thanks are also extended to the WHO Regional Office for Europe, the OECD, the World Bank and the European Commission for their data on health, health expenditure and health care services in Europe.

The HiT uses data available in April 2021, unless otherwise indicated. The HiT reflects the organization of the health system, unless otherwise indicated, as it was in April 2021.

The European Observatory on Health Systems and Policies is a partnership, hosted by the WHO Regional Office for Europe that includes the Governments of Austria, Belgium, Finland, Ireland, Norway, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the Veneto Region of Italy (with Agenas); the French National Union of Health Insurance Funds (UNCAM); the Health Foundation; the European Commission; the London School of Economics and Political Science (LSE); and the London School of Hygiene & Tropical Medicine (LSHTM). The Observatory is composed of a Steering Committee, core management team, research policy group and staff. Its Secretariat is based in Brussels and it has offices in London at LSE and LSHTM and in Germany at the Berlin University of Technology. The Observatory team working on HiTs is led by Josep Figueras, Director; Elias Mossialos, Martin McKee, Reinhard Busse (Co-directors); Ewout van Ginneken and Suszy Lessof. The Country Monitoring Programme of the Observatory and the HiT series are coordinated by Anna Maresso. The production and copy-editing process was coordinated by Jonathan North, with the support of Lucie Jackson, Sarah Cook (copy-editing) and Steve Still (typesetting).

# LIST OF ABBREVIATIONS

| | |
|---|---|
| **ADL** | activities of daily living |
| **ALOS** | average length of stay |
| **AMI** | acute myocardial infarction |
| **BMI** | body mass index |
| **CEZIH** | Central Health Information System of the Republic of Croatia |
| **CHIF** | Croatian Health Insurance Fund |
| **CIPH** | Croatian Institute of Public Health |
| **CME** | continuous medical education |
| **CT** | computed tomography |
| **DRG** | diagnosis-related group |
| **EBRD** | European Bank for Reconstruction and Development |
| **epSOS** | European Patient Smart Open Services |
| **EU** | European Union |
| **GDP** | gross domestic product |
| **HALMED** | Agency for Medicinal Products and Medical Devices |
| **HiT** | Health Systems in Transition |
| **HTA** | health technology assessment |
| **IMF** | International Monetary Fund |
| **IPA** | instruments for pre-accession |
| **MRI** | magnetic resonance imaging |
| **NGO** | non-governmental organization |
| **OECD** | Organisation for Economic Co-operation and Development |
| **OOP** | out-of-pocket |
| **PPP** | purchasing power parity |
| **SDR** | standardized death rate |
| **TRIPS** | Trade Related Aspects of Intellectual Property Rights |
| **UNODC** | United Nations Office on Drugs and Crime |
| **WHO** | World Health Organization |
| **WTO** | World Trade Organization |

# LIST OF TABLES, FIGURES AND BOXES

## Tables

## Figures

## Boxes

# ABSTRACT

This analysis of the Croatian health system reviews developments in its organization and governance, financing, provision of services, health reforms and health system performance. Croatia has a mandatory social health insurance system with nearly universal population coverage and a generous benefits package. Although per capita spending is low when compared to other EU countries, the share of public spending as a proportion of current health expenditure is high and out-of-pocket payments are low. There are sufficient physical and human resources overall, but some more remote areas, such as the islands off the Adriatic coast and rural areas in central and eastern Croatia, face shortages. While the Croatian health system provides a high degree of financial protection, more can be achieved in terms of improving health outcomes. Several mortality rates are among the highest in the EU, including mortality from cancer, preventable causes (including lung cancer, alcohol-related causes and road traffic deaths) and air pollution. Quality monitoring systems are underdeveloped, but available indicators on quality of care suggest much scope for improvement. Another challenge is waiting times, which were already long in the years before 2020 and are bound to have increased as a result of the COVID-19 pandemic.

# EXECUTIVE SUMMARY

## Croatia's life expectancy is far below the EU average and declined by 0.8 years in 2020

Croatia has a total population of approximately 4.1 million. Demographic challenges include the ageing of the population, low birth rates and negative migration trends. Croatia was less affected by the first wave of the COVID-19 pandemic than some other European countries, such as Italy or the United Kingdom. However, it was more affected than the EU average by the second wave, in terms of both cases and deaths per population.

Life expectancy at birth increased until 2019 to 78.6 years but, due to the impact of the COVID-19 pandemic, it decreased to 77.8 years in 2020, which was 2.8 years lower than the EU-27 average of 80.6 years. The decline in Croatia in 2020 of 0.8 years was greater than the decrease of 0.7 years in the EU overall. The gender gap in life expectancy is also greater than in the EU overall, with women on average living 6.2 years longer than men, compared to an EU average of 5.6 years.

Mortality rates for the most common causes of death are decreasing, especially for circulatory diseases and cancer, but are still above the EU average, in particular for circulatory diseases and cancer. A number of risk factors undermine progress in population health, including smoking rates that are much higher than the EU average, an increasing prevalence of obesity, and low levels of physical activity and consumption of fruit and vegetables.

## The health system is centralized and based on a mandatory health insurance system

The Ministry of Health is responsible for health policy, planning and evaluation, public health programmes and the regulation of capital investments for publicly owned health care providers. The Ministry's long-term planning tool is the National Health Strategy, the latest of which was published in 2012 and covers the period 2012–2020. The Ministry of Health also regulates quality standards for public and private health care providers. National authorities (the Ministry of Health and the Government) are responsible for the provision of tertiary care, which includes university hospitals and university hospital centres. Counties are accountable for the organization and management of primary (health centres, public health services and public pharmacies) and secondary care (general and specialized hospitals).

Croatia has a mandatory social health insurance system which consolidates public financing under a single entity, the Croatian Health Insurance Fund (CHIF). The CHIF is the single purchaser of health services provided under the mandatory health insurance scheme. It also offers complementary voluntary insurance that covers co-payments in the mandatory health insurance system.

Although most health care providers (especially of secondary and tertiary care) remain under public ownership, private providers have grown in number, notably in primary care, dental services and specialized clinics. Most primary care practices have been privatized, with the remaining ones in public ownership operating as health centres. University hospital centres, university hospitals, general hospitals, medical institutes and health centres cannot operate for profit. Furthermore, there must be at least one publicly owned primary health care centre per county and at least three in the city of Zagreb.

There is an increasing awareness of patient rights, but comparative information on providers is so far missing and there seem to be few repercussions for violating patient rights. People can choose their primary care provider and dentist.

## The share of public spending is high and a comprehensive benefits package covers nearly the entire population

Croatia spends a smaller amount on health per capita than most other EU Member States. The per capita health expenditure in Croatia was €1305 in 2018 (adjusted for differences in purchasing power), placing it among the four lowest spenders in the EU. However, when considering the proportion of GDP spent on health (6.8% in 2018), this share was higher than in seven other EU Member States.

Furthermore, the share of public spending as a proportion of current health expenditure is comparatively high, amounting to 83.2% in 2018. This was high compared to most countries in the WHO European Region, reflecting a tradition of solidarity in health care financing and the continued importance of health care on the Croatian policy agenda. In 2018, 12.3% of the total state budget was allocated to the health sector.

Croatia spends a higher share from public sources than the EU average for all areas of care, and co-payments do not seem to have affected affordability of health services. Out-of-pocket spending on health as a share of final household consumption was 1.3% in 2018, which was the lowest share of all EU countries and well below the EU average of 3.3%. Out-of-pocket (OOP) payments stood at 10.8% of current health expenditure in 2018, which was far below the EU average of 15.5%. Voluntary health insurance accounted for 3.8% in 2018, a larger share than in many EU countries.

Population coverage of the mandatory health insurance system is nearly universal, as all citizens and residents have the right to health care through the mandatory health insurance scheme. Although the breadth and scope of the scheme are broad, patients must contribute to the costs of many goods and services through co-payments. There are, however, exemptions from co-payments for vulnerable population groups. Certain population groups (e.g. people with disabilities) have the right to free complementary health insurance membership in the CHIF and their respective contributions are financed from the state budget.

Providers contracted by the CHIF are paid on the basis of different payment mechanisms. Primary care providers are paid using a combination of capitation, fee-for-service and pay-for-performance. Outpatient services are paid according to fee-for-service, while inpatient services are paid on the basis of an activity-based (DRG) system.

## There are sufficient physical resources and the number of physicians has increased, but geographical imbalances remain

Physical resources in Croatia's health system (such as hospital beds) are on a par with many other European countries. The number of practising physicians per 100 000 inhabitants (344 in 2018) in Croatia was below the EU average (382), but had increased steadily from 237 in 2000, despite fears of outmigration following EU accession in 2013.

However, the geographical distribution of health care infrastructure and human resources varies considerably. Central Croatia (mainly Zagreb county and the city of Zagreb) has the largest number of facilities and health workers, while there are fewer facilities and health personnel (in particular primary care practitioners) in more remote areas, such as the islands off the Adriatic coast and rural areas in central and eastern Croatia. More people in Croatia (0.7% in 2019, compared to an EU average of 0.1%) report unmet medical needs due to distance than in any other EU Member State, indicating challenges in the geographical distribution of health facilities.

During the COVID-19 pandemic Croatia took a number of measures to increase the number of staff where needed and to ensure the retention of existing health workers. Measures to increase the number of staff included the redeployment of doctors and nurses, as well as the inclusion of young doctors. Measures to support the health workforce included benefits in the form of funding or the provision of accommodation for doctors working with COVID-19 patients.

## Public health and primary care are well developed, but geographical distribution and privatization are challenges

The provision of public health services is organized through a network of public health institutes, with one national institute (the Croatian Institute of Public Health, CIPH) and 21 county institutes which are coordinated and supervised by the CIPH. The CIPH is responsible for the collection, analysis and publication of public health statistics (e.g. information on disease incidence or mortality) and epidemiological data, and for health promotion and health education, as well as disease control and prevention. It also maintains health registers. During the COVID-19 pandemic it was the

main body regulating the coordination of surveillance, communication and international reporting. Vaccinations against COVID-19 started in January 2021. Intersectoral policies to address key determinants of ill-health, such as smoking and poor nutrition, are underdeveloped. In particular, anti-smoking policies are weak, with a lack of smoke-free places and underdeveloped media campaigns against tobacco use.

Primary care physicians (family physicians, paediatricians and gynaecologists) are patients' first point of contact and serve as gatekeepers to more complex medical care. Primary care services are provided in solo practices, larger units comprising several offices, and county health centres. A wide range of services is available at the primary care level, including general practice/family medicine, health services for pre-school children, maternal health services, home care and nursing care. Challenges in primary care are availability in rural areas and on the islands, and that privatization weakens the role of publicly owned primary health care centres in organizing aligned health services at the local level.

Specialized outpatient care is mostly delivered in hospital outpatient departments. Other settings include specialized ambulatory care units in public polyclinics and county health centres (usually linked to general and university hospitals) or private facilities. Inpatient secondary care facilities include general and specialized hospitals. There is an increasing share of day care procedures for conditions such as cataract or hernia.

Pharmacies are mainly located in cities and towns, while the pharmacy network in rural areas remains poorly developed. To increase the affordability of medicines, Croatia is taking part in cross-border cooperation to jointly negotiate with the pharmaceutical industry on drug pricing through the Valletta Group (with Cyprus, Greece, Ireland, Italy, Malta, Portugal, Romania, Slovenia and Spain).

Croatia's long-term care system is underdeveloped, with little or no coordination between the social welfare, health and war veterans' systems; between national, county and municipal/city levels; or between public and private (not-for-profit and for-profit) providers. Only about 3% of older people received a form of public residential long-term care in 2018.

The establishment of palliative care was one of the priorities of the National Health Care Strategy 2012–2020. Two strategic plans for palliative care were adopted subsequently that helped to establish a model of integrated palliative care implemented nationally.

Mental health services are mainly provided in institutions. Community mental health care, except for certain programmes such as prevention of addiction, remains underdeveloped, but a pilot project which includes mobile mental health teams is currently being carried out.

## Health reforms have been adopted but are not always implemented

In recent years Croatia has undertaken reforms in a range of areas, including health financing, primary care, hospital care, public health, pharmaceutical policies and palliative care. The reforms aimed to make health financing more sustainable, strengthen primary care, reduce hospital capacity and improve access to palliative care and expensive pharmaceuticals. However, progress in implementation varied, with implementation still at an early stage in the areas of hospital reform, primary care and human resources management and planning.

The National Development Strategy for 2020–2030, which includes areas of focus in the health sector, is anticipated to be a key strategic document to direct future efforts, partly because it is anticipated to be the basis for planning the budget and programming of financial resources from EU funds and other international sources. Other important strategic documents are the National Plan Against Cancer for 2020–2030 and the Action Plan for Prevention and Control of Chronic Non-Communicable Diseases for 2020–2026.

## Health services are accessible and affordable, but mortality from preventable and amenable causes remains high

Health reforms are guided by a national health strategy, but do not always correspond to it in practice. There is a lack of continuous and constructive evaluation processes that would allow for improvements and adjustments.

Accessibility of services is generally high, given the country's near-universal population coverage (covering over 99% of the population), with a wide range of services covered by mandatory health insurance and low out-of-pocket payments. Unmet medical need due to cost is relatively low

and has been on the decline over the past few years, decreasing from 6.3% in 2010 to 0.3% in 2019. However, the poorest are more affected. There are also geographical barriers, as well as long waiting times, which are likely to have increased as a result of the COVID-19 pandemic.

Improving health care quality is an explicit policy aim, but so far a comprehensive quality improvement strategy with an action plan that defines priorities, performance indicators and roles/responsibilities is missing. Key indicators on the quality of primary care, such as avoidable hospital admissions for chronic conditions including chronic obstructive pulmonary disease (COPD), congestive heart failure, diabetes and asthma, which are available for other EU countries, are still lacking for Croatia. With regard to the quality of hospital care, the standardized 30-day hospital mortality rate for acute myocardial infarction (AMI) is much higher than in most other EU countries.

The Croatian health system faces high rates of preventable and amenable mortality. Several mortality rates are among the highest in the EU, including mortality from cancer, preventable causes (including lung cancer, alcohol-related causes and road traffic deaths) and air pollution. Croatia has also been severely affected by the COVID-19 pandemic.

Croatia spends a larger share of its health expenditure on pharmaceuticals and medical devices than many other EU countries, while spending on long-term care only made up 3.0% of health expenditure in Croatia in 2018, much lower than the EU-27 average of 16.1%. Challenges to improved allocative efficiency include a continued emphasis on hospital care and deficiencies in primary care, while technical inefficiencies exist in both hospital and primary care.

## Conclusion

The COVID-19 pandemic has provided an added incentive to accelerate health reforms, step up public health policies and improve the sustainability of the health system. There are some areas where progress has been achieved, such as in e-health, with electronic referrals becoming more common and primary care consultations being conducted remotely. However, it is unclear whether these interventions could prevent an increase in unmet needs for health services in the future due to the impact of suspended or reduced

face-to-face consultations and surgeries during the pandemic. The National Development Strategy for 2020–2030 might provide the required framework for accelerating reforms of hospital and primary care and for improving quality of care.

1

# Introduction

## Summary

- Croatia is a small central European country with a long Adriatic coastline, bordered by Slovenia, Hungary, Serbia, Bosnia and Herzegovina, and Montenegro.

- The country is a parliamentary democracy, established by the Constitution of 22 December 1990. Local government is organized on two levels, consisting of 21 counties (including the capital Zagreb) at the higher level and 127 cities and 428 municipalities at the lower level.

- Croatia has a total population of approximately 4.1 million. Demographic challenges include the ageing of the population, low birth rates and negative migration trends.

- Life expectancy at birth increased by four years between 2000 and 2019, from 74.6 to 78.6 years, but decreased by 0.8 years between 2019 and 2020 due to the impact of the COVID-19 pandemic (compared to a decrease of 0.7 years in the EU overall), reaching 77.8 years, the level it was at in 2013.

- The gender gap in life expectancy is greater than for the EU overall, with women on average living 6.2 years longer than men, compared to an EU average of 5.6 years.

- Croatia's GDP declined by 8.4% in 2020 in the wake of the Coronavirus pandemic, exacerbated by the country's heavy reliance on tourism.

- Mortality rates for the most common causes of death are decreasing, especially for circulatory diseases and cancer, but are still above the EU average. Behavioural risk factors are major contributors to premature mortality. In 2020 and 2021 COVID-19 accounted for a substantial number of deaths, particularly during the second wave of the pandemic.

## 1.1 Geography and sociodemography

Croatia (*Hrvatska*) is a small country at the crossroads of central and southeast Europe, with a long Adriatic coastline. Covering an area of 56 594 km$^2$, Croatia is bordered by Slovenia and Hungary (to the north), and by Serbia, Bosnia and Herzegovina, and Montenegro (to the east and south) (Figure 1.1). Shaped as a horseshoe, it is diverse in terms of climate and relief, consisting of three major geographical regions: the Pannonian region in the east, the central mountain region and the coastal region in the south, with a multitude of islands. Croatia has an important geographical position as several pan-European transport corridors and their branches pass through the country.

According to the World Bank (2021), Croatia's total population in 2020 was 4.0 million (Table 1.1). The war in 1991–1995 negatively affected the number of births, the mortality of younger age groups and migration trends. Ever since, there has been a population decline, due to a low fertility rate and emigration. Emigration has been driven by a mix of economic and political factors and, recently, by Croatia's entry into the European Union (EU) in 2013 (Župarić-Iljić, 2016).

**FIG. 1.1** Map of Croatia


*Source:* United Nations, 2008.

Like other European countries, Croatia is experiencing population ageing. The share of the population aged 65 years and above increased from 13.7% in 1995 to 21.3% in 2020. Over the same period, the share of the population aged 0–14 years decreased from 18.4% to 14.5% (Table 1.1).

With the exception of the city of Zagreb, the population has been shrinking across the country, although this process is more pronounced in the eastern regions (European Commission, 2019a). The majority of the population (57.6% in 2020) lives in urban areas and the share of the rural population is declining (Table 1.1).

**TABLE 1.1** Trends in population/demographic indicators, 1995–2020, selected years

| | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
|---|---|---|---|---|---|---|
| Total population (millions) | 4.6 | 4.5 | 4.3 | 4.3 | 4.2 | 4.0 |
| Population ages 0–14 (% of total) | 18.4 | 17.3 | 15.7 | 15.4 | 14.5 | 14.5 |
| Population ages 65 and above (% of total) | 13.7 | 15.6 | 17.2 | 17.6 | 19.2 | 21.3 |
| Population density (people per sq. km) | 82.6 | 79.9 | 77.0 | 76.8 | 75.1 | 72.2* |
| Population growth (annual growth rate) | –0.7 | –1.0 | 0.1 | –0.2 | –0.8 | –0.5 |
| Fertility rate, total (births per woman) | 1.6 | 1.4 | 1.5 | 1.6 | 1.4 | 1.5** |
| Urban population (% of total) | 52.3 | 53.4 | 54.3 | 55.2 | 56.2 | 57.6 |

*Source:* World Bank, 2021.

*Note:* *2018 data; **2019 data.

The official language is Croatian. As of the latest population census in 2011, the main minority groups are Serbs (4.4% of the total population), followed by Bosniaks, Italians, Albanians and Roma (together accounting for 1.96% of the population). The most prevalent religion is Roman Catholicism (86.3%) (Croatian Bureau of Statistics, 2018).

## 1.2 Economic context

In 2020 GDP declined by 8.4% (Table 1.2), reflecting the impact of the COVID-19 pandemic, which was exacerbated by the country's heavy reliance on tourism. The Government's interventions have come at the expense of a high budget deficit and a significant rise in public debt.

Prior to the COVID-19 pandemic, Croatia experienced a lost decade after the economic crisis of 2008 in terms of catching up economically with the rest of the EU. Following a six-year recession and a moderate recovery, it took until 2019 for the volume of economic output to surpass the pre-crisis level. Croatia's GDP per capita adjusted for purchasing power was 63% of the EU average in 2018, the same value as in the last pre-crisis year (2008). During the 2010s Croatia fell further behind its more advanced peers in central and eastern Europe (in particular the Czech Republic, Hungary, Poland, Slovakia and Slovenia), lagging in aspects of governance, business

environment and human capital indicators (European Commission, 2019a, World Bank, 2019a).

There is also a marked regional divide in Croatia, with large differences in GDP levels between counties, and in particular between the capital and the rest of the country (European Commission, 2019a). The rates of people at risk of poverty and social exclusion in Croatia have been falling despite the COVID-19 pandemic (from 24.1% in 2018 to 23.3% in 2019 and 23.2% in 2020), but remain slightly above the EU average (20.9% in 2019) (Eurostat, 2021).

**TABLE 1.2** Macroeconomic indicators, 1995–2020, selected years

| | 1995 | 2000 | 2005 | 2010 | 2015 | 2020 |
|---|---|---|---|---|---|---|
| GDP per capita (current US$) | 4 852 | 4 850 | 10 530 | 13 924 | 11 783 | 13 828 |
| GDP per capita, PPP (current international $) | 7 959 | 10 604 | 15 304 | 19 776 | 23 013 | 26 465 |
| GDP growth (annual %) | – | 3.3 | 4.3 | −1.5 | 2.4 | −8.4 |
| General government final consumption expenditure (% of GDP) | 24.9 | 21.4 | 18.5 | 20.5 | 20.1 | 22.4 |
| Government consolidated gross debt (% of GDP) [a] | 22.6 | 35.7 | 41.3 | 57.8 | 84.3 | 88.7 |
| Unemployment, total (% of total labour force) (modelled ILO estimate) | 10.5 | 16.1 | 12.6 | 11.6 | 16.2 | 7.2 |
| People at risk of poverty or social exclusion [a, b] | – | – | – | 31.1 | 29.1 | 23.2 [p] |
| Gini coefficient of equalized disposable income – EU-SILC survey [a] | – | – | – | 31.6 | 30.4 | 28.3 [p] |

*Sources:* World Bank, 2021; (a) Eurostat, 2021.

*Notes:* b) The risk-of-poverty threshold is set at 60% of the national median equalized disposable income (after social transfers); PPP: Purchasing power parity; GDP: gross domestic product; ILO: International Labour Organization; p = provisional.

## 1.3 Political context

Croatia is a parliamentary republic. It was established by the Constitution of 22 December 1990. The political system is based on the principle of the division of power between the legislative, executive and judicial branches. The Constitution states that the people have the power to elect their own representatives by direct election; it also guarantees the right to local and regional self-government.

The Croatian Parliament is the representative body of the population and is vested with legislative power. It has a minimum of 100 and a maximum of 160 members, who are elected directly by secret ballot based on universal suffrage for a term of four years. Currently the Croatian Parliament has 151 members, elected in July 2020.

The Government, led by the Prime Minister and their cabinet, exercises executive power. It is accountable to the Parliament. Its members are elected for four years. The Government proposes laws and other acts to the Parliament, proposes the State Budget and annual accounts, executes laws and other decisions by the Parliament, adopts decrees to implement the law, conducts internal and foreign policy, directs and supervises the work of the state administration, takes care of the economic development of the country, and directs the performance and development of public services. Andrej Plenkovic (Croatian Democratic Union) was elected for his second term as Prime Minister in July 2020 with 82% of the votes. The centre-right Croatian Democratic Union has been the ruling party since the 1990s, except in the periods 2000–2003 and 2012–2016 (Miroslav Krleza Institute of Lexicography, 2020).

The President is elected pursuant to universal and equal suffrage by direct election for a period of five years. The President provides for the regular, balanced operation and stability of state authorities, is responsible for defending the state's independence and territorial integrity, is the commander-in-chief of the armed forces, calls elections to the Croatian Parliament and convenes its first sitting, calls referenda, gives the mandate to form the Government, grants pardons, confers decorations and awards, and cooperates with the Government in forming and implementing foreign policy. Zoran Milanovic, Croatia's former leftist Prime Minister (2012–2016), was elected the country's new President in January 2020 (Miroslav Krleza Institute of Lexicography, 2020).

Judicial power is exercised by the courts, which are autonomous and independent. According to the law, state authority bodies are obliged to protect the Constitution and laws confirmed by the legal order of the country and to guarantee the uniform application of the law and equal rights and privileges of all before the law.

Local government is organized on two levels: 21 counties (including the city of Zagreb) at the higher level, and 127 cities and 428 municipalities at the lower level. Counties are regional territorial units, each governed by a county assembly, a county head and a county administration. Municipalities are smaller, comprising a municipal council and a municipal mayor. County and municipality representatives are elected in regional elections for four-year terms.

Croatia is a member of the Council of Europe and the United Nations and its specialized agencies. It joined the World Bank in 1993. In 2000 Croatia joined the NATO Partnership for Peace programme of bilateral cooperation and the World Trade Organization. Croatia became a NATO member on 1 April 2009 and a member of the EU on 1 July 2013.

## 1.4 Health status

Life expectancy at birth increased by four years between 2000 and 2019, from 74.6 to 78.6 years, but decreased by 0.8 years between 2019 and 2020 due to the impact of the COVID-19 pandemic (compared to a decrease of 0.7 years in the EU overall), reaching 77.8 years, the level it was at in 2013 (Table 1.3). The gender gap in life expectancy in Croatia is greater than for the EU overall, with women on average living 6.2 years longer than men, compared to an EU average of 5.6 years in 2020. Circulatory diseases were the leading cause of death in 2018, followed by cancer (Table 1.3).

Croatia was less affected by the first wave of the COVID-19 pandemic than some other European countries, such as Italy or the United Kingdom. However, it was more affected than the EU average by the second wave, in terms of both cases and deaths per population. By 24 May 2021 Croatia had recorded 353 986 confirmed COVID-19 cases and 7903 deaths from COVID-19 (195 per 100 000 population), placing it among the top 15 countries worldwide and 13th in Europe in terms of deaths per population (WHO, 2021b).

**TABLE 1.3** Mortality and health indicators, 2005–2020, selected years

| | 2005 | 2010 | 2015 | 2018 | 2020 | EU (2020) |
|---|---|---|---|---|---|---|
| **LIFE EXPECTANCY (YEARS)** | | | | | | |
| Life expectancy at birth, total | 75.3 | 76.7 | 77.5 | 78.2 | 77.8 | 80.6 |
| Life expectancy at birth, male | 71.7 | 73.4 | 74.4 | 74.9 | 74.7 | 77.9 |
| Life expectancy at birth, female | 78.8 | 79.9 | 80.5 | 81.5 | 80.9 | 83.5 |
| Life expectancy at 65 years, male | 13.8 | 14.7 | 15.2 | 15.7 | 15.9 (2019) | 18.4 (2019) |
| Life expectancy at 65 years, female | 17.3 | 18.2 | 18.7 | 19.3 | 19.5 (2019) | 21.8 (2019) |
| **MORTALITY** | | | | | | |
| Mortality, SDR per 100 000 population | | | | | | |
| Circulatory diseases | 885 | 753 | 711 | 609 | – | 370 (2016) |
| Malignant neoplasms | 335 | 339 | 336 | 324 | – | 257 (2016) |
| Communicable diseases | 13 | 13 | 17 | 12 | – | 30 (2016) |
| External causes | 77 | 78 | 76 | 76 | – | 47 (2016) |
| All causes | 1 614 | 1 444 | 1 430 | 1 331 | – | 999 (2016) |
| Infant mortality rate | 5.7 | 4.4 | 4.1 | 4.2 | – | 3.4 |
| Maternal mortality ratio (modelled estimate, per 100 000 live births) | 10.0 | 9.0 | 8.0 | 8.0 (2017) | – | 6.0 (2017) |

*Sources:* Eurostat, 2021, except for maternal mortality ratio: World Bank, 2020.

*Note:* SDR: standardized death rate.

In 2020 COVID-19 accounted for more than 4000 deaths in Croatia (or 8.4% of all deaths). An additional 4147 deaths were registered in the first half of 2021. The mortality rate from COVID-19 up to the end of June 2021 was about 30% higher in Croatia than the average across EU countries, about 2025 per million population compared with an EU average of about 1660. The broader indicator of excess mortality (defined as deaths from all causes above what would normally be expected based on the experience from previous years) suggests that the direct and indirect death toll related

to COVID-19 could actually be higher. The number of excess deaths from March to December 2020 was one third higher than registered COVID-19 deaths (about 5451 deaths compared to 4072), which may indicate an underreporting of COVID-19 deaths (OECD/European Observatory on Health Systems and Policies, 2021).

Social inequalities in life expectancy appear to be less pronounced in Croatia than in many other EU countries. Yet men with low education live on average 5.2 years less than those who completed tertiary education. The gap for women (1.6 years) is far below the EU average (4.1 years).

The gender gap in life expectancy at age 65 is 3.6 years in favour of women (19.3 years, compared to 15.7 for men). However, there is no gender difference in the number of healthy life years (a composite measure of health that combines mortality and morbidity data) because women tend to live a greater proportion of their lives after age 65 with health issues and disabilities.

Three in five (60%) Croatians aged 65 years and over report having at least one chronic condition, which is higher than the average across the EU, according to SHARE data. Most people are able to continue to live independently in old age, but one in five people report some limitations in basic activities of daily living (ADL), such as bathing, dressing or getting out of bed, that may require long-term care. This proportion is similar to the EU average (OECD/European Observatory on Health Systems and Policies, 2019).

Cancer is another challenge. In 2018, 626.8 people per 100 000 population (706.4 males and 552.4 females) were diagnosed with invasive cancer (excluding skin cancer). The most common cancer sites in males in 2018 were prostate (21% of new cases), lung (16%), colorectal (15%), bladder (5%) and stomach (4%), and melanoma (4%). Breast cancer was the most common type of cancer in females (24% of new cases), followed by colorectal (13%), lung (9%), uterine body (6%), thyroid (5%), ovary, fallopian tube and adnexa (4%) and stomach (3%) (CIPH, 2020b).

The overall mortality from cancer in Croatia is among the highest in the EU: with 320 deaths from cancer per 100 000 population in 2020, Croatia ranks fifth (after Slovakia, Poland, Cyprus and Hungary), well above the EU27 average (260 deaths per 100 000 population) (OECD/European Observatory on Health Systems and Policies, 2021).

**TABLE 1.4** Risk factors affecting health status in adults, EHIS

| | CROATIA | EU-27 AVERAGE (%) |
|---|---|---|
| Smoking (daily smokers of cigarettes) (2014) | 24.5 | 19.0 |
| Alcohol (consumption every week) (2019) | 17.9 | 28.8 |
| Obesity (BMI >30) (2019) | 22.6 | 16.0 |
| Physical activity (health-enhancing aerobic exercise at least once a week) (2014) | 19.4 | 29.9 |
| Consumption of fruit and vegetables (five or more a day) (2014) | 7.0 | 11.9 |
| Consumption of fruit and vegetables (five or more a day) (2014) | 7.0 | 11.9 |

*Source:* Eurostat, 2021 .

It is expected that the incidence of cancer will increase in the coming years, due to population ageing and a high prevalence of unfavourable lifestyles such as low levels of physical activity, high alcohol consumption, unhealthy diets and smoking (CIPH, 2020b). These risk factors, except for alcohol consumption by adults, are more prevalent than in the EU overall (see Table 1.4), and are major contributors to cancer and cardiovascular mortality.

# 2

# Organization and governance

## Summary


- The Ministry of Health is charged with the governance of the health system. Counties are responsible for the organization and management of primary and secondary care, while national authorities are responsible for tertiary care. Funding and regulation are also managed at the national level.

- Croatia has a mandatory social health insurance system with the Croatian Health Insurance Fund (CHIF) being the single purchaser of publicly funded health services. It also offers complementary insurance.

- Although most health care providers (especially of secondary and tertiary care) remain under public ownership, private providers have grown in number, notably in primary care, dental services and specialized clinics.

- University hospital centres, university hospitals, general hospitals, medical institutes and health centres cannot operate for profit. Furthermore, there must be at least one publicly owned primary health centre per county and at least three in the city of Zagreb.

- There is an increasing awareness of patient rights, but comparative information on providers is so far missing and there seem to be few repercussions for violating patient rights.

## 2.1 Historical background

After the First World War medical care was mostly provided privately. During the 1920s the state's strategic goal was to establish a public health care system targeting primarily rural areas where more than 80% of the population lived. Professor Andrija Štampar, who in 1946 became the first president of the World Health Assembly, helped introduce a range of public health services in the 1920s and 1930s. He also pioneered primary health care centres.

Health insurance was introduced in 1922 through three separate private organizations. These schemes were some of the more advanced in Europe. They also had their own health care providers. Croatia ran its health services with its own Ministry of Health as a federal state within the Socialist Federal Republic of Yugoslavia. In 1945 mandatory health insurance covering most of the population was introduced and financed from income-related contributions and the state budget. In line with socialist ideology, private medical practices were reduced to a very small number (with the exception of dental practices). After the country's independence in 1991, the health system underwent a series of reforms that transformed the once fragmented and highly decentralized system into a more centralized one, maintaining the principles of universality and solidarity. The 1993 Health Care Act consolidated the previously decentralized governance and financing schemes under a single public entity, the Croatian Health Insurance Fund (CHIF), providing universal health insurance coverage to the whole population. Croatia's accession to the EU in 2013 was accompanied by harmonization with EU legislation. In 2017 the Government adopted the National Reform Programme, which is focused on creating a financially sustainable health system. The document sets out a hospital restructuring plan to achieve higher quality, improved health outcomes and patient satisfaction, and the long-term rationalization of the hospital sector. In 2018 the Parliament adopted a new Health Care Act. Its primary aims are to regulate services provided by community health centres and expand the provision of palliative care.

## 2.2 Organization

The legal framework for the Croatian health system is largely set out by the 2018 Health Care Act. The steward of the health system is the Ministry of Health, responsible for health policy, planning and evaluation, public health programmes and the regulation of capital investments for publicly owned health care providers. Publicly financed health services are based on the principles of comprehensiveness (covering all segments from health promotion to palliative care), continuity, accessibility and universality (covering the whole population) in primary care and referral-based secondary and hospital care. Accessibility is regulated with the aim of ensuring that every person has equitable access to health services, such as through an appropriate distribution of health care institutions and health workers. The principle of comprehensiveness in primary health care is addressed by measures aimed at improving health, preventing disease and providing treatment, rehabilitation and palliative care.

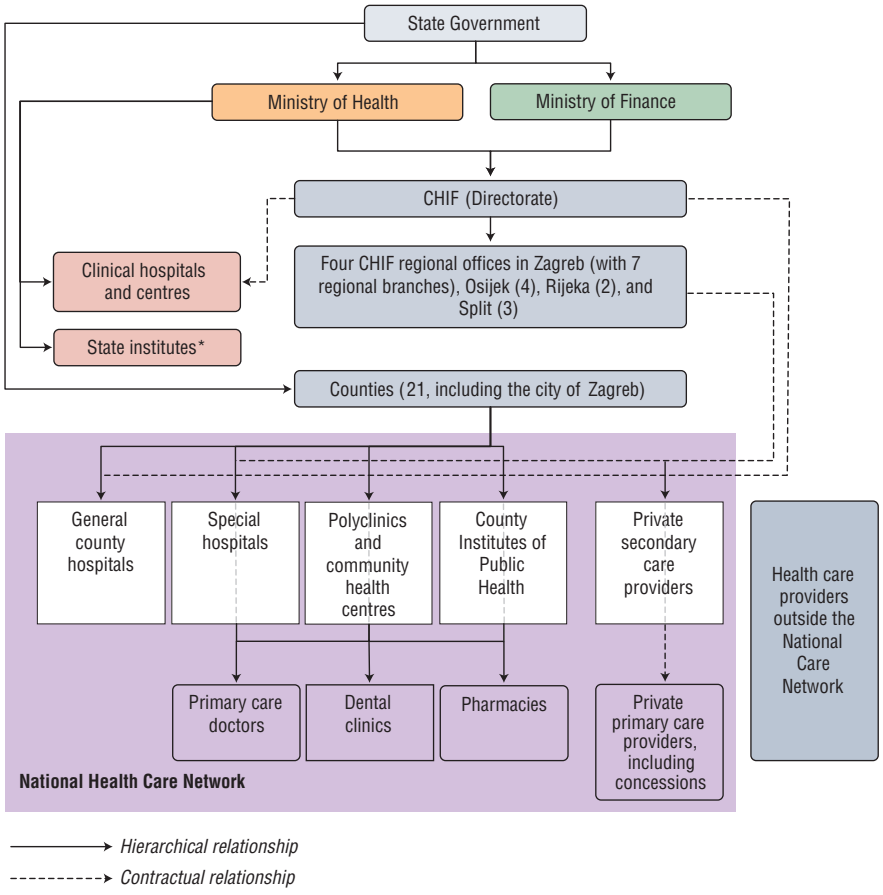
Generally, counties, as regional authorities, are accountable for the organization, coordination and management of primary health care (health centres, public health services and public pharmacies) and secondary health care (general and specialized hospitals). Most primary care practices have been privatized, and the remaining ones are in public ownership as health centres. National authorities (the Ministry of Health and the Government) are responsible for tertiary care.

### 2.2.1 *Ministry of Health*

At the central level, the Ministry of Health is responsible for:

- health policy, planning and evaluation, drafting of legislation, regulation of standards for health services, and training of health workers;
- public health programmes, including monitoring and surveillance; and
- regulation of capital investments of publicly owned health care providers.

**FIG. 2.1** Overview of the health system




** The state institutes include the Croatian National Institute of Public Health (CNIPH), Croatian National Institute of Transfusion Medicine, Croatian National Institute for Protection of Health and Safety at Work, Croatian National Institute for Toxicology and Croatian National Institute for Emergency Medicine.*

*Source:* Džakula et al., 2014.

In particular, it draws up legislation for consideration by the Parliament, produces health-related strategic documents, monitors population health status and health care needs, regulates standards in health facilities, and supervises professional activities such as specialist training. The Ministry of Health also manages public health activities, including sanitary inspections, supervision of food and pharmaceutical quality, and health promotion activities. It also nominates the chairs of the governing councils and appoints the majority of the board members in state-owned health care facilities.

### 2.2.2 *Ministry of Finance*

The Ministry of Finance is responsible for the planning and management of the government budget, including the approval of central budget transfers to the CHIF and the Ministry of Health. Therefore, the Ministry of Finance plays a key role in determining the overall level of public spending on health.

### 2.2.3 *Ministry of Labour, Pension System, Family and Social Policy*

The Ministry of Labour, Pension System, Family and Social Policy was set up in 2020, when the Ministry of Demography, Family, Youth and Social Policy was merged with the Ministry of Labour and Pensions. The Ministry oversees the network of social care entities and monitors the social welfare system. Since June 2017 the previous Ministry of Labour and Pensions has developed the Zaželi programme, which offers unemployed, lower-educated women home assistance jobs targeting older people and people with disabilities in local communities, especially those in remote areas (rural areas and islands).

### 2.2.4 *Croatian Health Insurance Fund*

Established in 1993, the Croatian Health Insurance Fund (CHIF) is the single purchaser of health services provided under the mandatory health insurance scheme. It may also offer complementary (called "supplementary" in Croatia) voluntary health insurance to persons insured under the mandatory health insurance scheme. The Ministry of Health defines the basic benefits covered under the statutory insurance scheme, while the CHIF plays a key role in the establishment of performance standards and price-setting for services covered under the mandatory health insurance scheme. The CHIF is also responsible for the distribution of sick leave compensation, maternity benefits and other allowances as regulated by the Mandatory Health Insurance Act. In 2002 the CHIF was consolidated under the Treasury account but it has operated separately since 1 January 2015.

### 2.2.5 *Croatian Institute of Public Health*

The Croatian Institute of Public Health (CIPH) was established in 1923. Its main activities include:

- statistical research on health and health services;
- maintaining public health registers;
- monitoring and analysing the epidemiological situation;
- provision, organization and conduct of preventive and counter-epidemic measures;
- planning and control of disinfection and pest control measures;
- planning, control and evaluation of mandatory immunizations;
- microbiological activities; and
- testing and control of the safety of drinking water, waste water and food.

### 2.2.6 *Counties and the city of Zagreb*

Local governments own and operate most of the public primary and secondary health care facilities, including general and specialized hospitals, county health centres, public health institutes and community health institutions (home care and emergency care units). While these facilities receive operating expenditure through their contracts with the CHIF, local authorities are responsible for financing infrastructure maintenance and, increasingly, capital investments. They are also responsible for any losses these health care facilities accrue.

### 2.2.7 *Professional chambers*

Croatia has statutory professional chambers for a number of medical professions. The chambers are responsible for the registration of professionals and the maintenance of professional standards. Membership of health care workers in their respective professional chamber is mandatory. The chambers also provide opinions on a variety of issues, as well as advice on the licensing of private practices and the opening or closing of health institutions.

### 2.2.8 *The private sector*

Although most health care providers remain under public ownership, private providers have grown in number, notably in primary care, dental services and specialized clinics. A small but growing private insurance market has also developed, offering complementary (covering cost-sharing in the mandatory health insurance system) and supplementary (covering health services not included in the mandatory health insurance system) insurance coverage.

## 2.3 Decentralization and centralization

During the 1980s the Croatian health system was notable for its decentralization in terms of its community management of public services introduced by the 1974 Constitution. Local authorities enjoyed a high level of autonomy and health workers and users were supposed to participate in decision-making.

Since the early 1990s, and especially following the war in 1991–1995 and the start of economic transition, the entire system of public services has undergone a series of radical reforms. There was a general shift towards centralization and privatization. The aim of these reforms was to improve the functioning of the health system, while at the same time maintaining the core principles of universality and solidarity.

However, the 1993 Health Care Act introduced several elements of decentralization. For example, it transferred the ownership of secondary health care institutions to the counties and enabled privatization of health care provision, while maintaining central control through funding and regulation (Džakula, 2005).

Changes introduced in the 1980s and 1990s had several major shortcomings. Firstly, a substantial proportion of counties lacked the technical competence and administrative and managerial capacity to govern health care institutions. Secondly, health care financing and the allocation of resources were concentrated at the state level, ignoring local needs, resulting in growing regional health disparities. Under the Government's decentralization policy implemented since 2001, local authorities have been expected to play a bigger role in the coordination and management of health services at county and municipal levels. In practice, counties did not recognize and seize this opportunity.

## 2.4 Planning

### 2.4.1 *Policy formulation, implementation and evaluation*

Health reform proposals usually originate at the Ministry of Health. A proposal must be consulted with the relevant stakeholders (e.g. professional chambers or patient associations) or be subjected to an online public consultation before being sent to the Government and, as a next step, to the Parliament. The Parliament decides whether to accept, amend or reject it. If changes are proposed, the changed proposal could be subjected to a further consultation process involving the Ministry of Health, relevant stakeholders or the general public. Proposals may also come from members of Parliament; they can be submitted directly to Parliament, without the initial consultation phase required in the case of proposals submitted by the Ministry of Health.

### 2.4.2 *Planning at the central level*

The Ministry of Health is responsible for planning at the central level. Its long-term planning tool is the National Health Strategy. The latest strategy was published at the end of 2012. Its planning period (2012–2020) coincides with key strategic documents of the EU and WHO, such as "Health 2020". The strategy is the umbrella document determining the context, vision, priorities, goals and key measures in health care in the planning period. Other planning documents are developed accordingly. The National Health Plan is the medium-term planning tool, for periods of between five and ten years. It contains broad tasks and goals for the health sector, sets out priority areas and identifies the health needs of population groups of special interest. Based on the National Health Plan, the Ministry of Health prepares the Plan and Programme of Health Care Measures that specifies the catalogue of health care goods and services that must be delivered to the population.

### 2.4.3 *Planning at the county level*

At the county level, and in the city of Zagreb, county institutes of public health collect health data and participate in the formulation and implementation of county health programmes for their respective areas. They are committed to their local health priorities, but their activities must be aligned with the National Health Plan. Local authorities are obliged to create their own annual and three-year county health plans and have to establish health councils as professional advisory bodies. In addition to regular health financing, they are also given extra funding from the Ministry of Health to cover their priorities (mostly capital investments).

## 2.5 **Intersectorality**

The importance of intersectoral cooperation in the area of health is emphasized in the National Health Strategy 2012–2020, which includes "cooperation with other sectors and society in general" as one of its priorities. Following the European strategy "Health 2020", set out by the WHO Regional Office for Europe, the National Health Strategy 2012–2020 advocates "health in all policies", as well as "whole-of-government" and "whole-of-society" approaches. The need for intersectoral cooperation in the implementation of legislation is often explicitly stated in the laws themselves. Various strategic documents call for intersectoral cooperation between actors such as ministries, agencies, institutes, schools, non-governmental organizations (NGOs) and the media. However, specific protocols for intersectoral cooperation have not been developed, except for major natural and technological disasters and accidents, and (suspected) violence.

In response to the COVID-19 pandemic a National Civil Protection Headquarters was established in 2020, together with Local Civil Protection Headquarters. The National Civil Protection Headquarters have been the main national coordinating body for the COVID-19 response.

The National Health Care Development Plan 2021–2027 is currently being prepared, addressing intersectorality as well, especially for health and social care.

## 2.6 Health information systems

Information relevant to the health sector is collected and processed by a number of services and networks. National registries collect data on public health priorities, such as the prevalence or incidence of certain diseases or health problems, providing continuous surveillance. Examples of such registries include the Cancer Registry, the Registry of People with Disabilities, the Registry of Treated Psychoactive Drug Addicts, the Registry of Committed Suicides and the Registry of Psychoses. There are also registries collecting information on health care resources. Based on previously unconnected and unharmonized registries, the National Public Health Information System was developed as a common platform.

Another important source of information is the Central Health Information System, owned by the Ministry of Health and managed by the Croatian Health Insurance Fund. The Central Health Information System is an integrated health information system and centralized ICT infrastructure for standardized exchange of health data and information to support the delivery of primary, secondary and tertiary level health care. It connects all peripheral information systems in primary care physicians' offices, pharmacies and biochemical laboratories, as well as information systems in hospitals used for centralized scheduling of specialist consultations and diagnostic tests. All participants send real-time data to the central database, which provides regular updates to the National Public Health Information System.

## 2.7 Regulation

The Constitution guarantees everyone the "right to health care in accordance with the law". Croatia's EU accession on 1 July 2013 required harmonization of the regulatory framework governing the health sector with the relevant EU legislation.

The basic legal framework of the health system is based on the following legislation (and their later amendments): the Health Care Act of 2018 (with amendments in 2019 and 2020); the Mandatory Health Insurance Act of 2013 (Republic of Croatia, 2013), introduced mainly to align the Croatian legislation with the 2011 EU Patient Rights Directive; and the Patient Rights Protection Act of 2004 (amended in 2008).

The Health Care Act regulates the principles of health care organization, the rights and obligations of health care users, the types and responsibilities of health care institutions (at various levels of care), and the principles for monitoring health care institutions. The Mandatory Health Insurance Act regulates the scope of the right to health care and other rights and obligations of persons insured under the mandatory health insurance scheme. The rights of patients are regulated in the Patient Rights Protection Act.

The Health Data and Information Act was adopted in February 2019. It aims to improve personal data protection in health care with regard to the collection, management and disposal of patient records in the Central Health Information System. The Act foresees the establishment of a central eHealth authority, which is planned to be set up within the Ministry of Health.

The Act on the Cyber Security of Key Service Operators and Digital Service Providers and the related Regulation on Cyber Security of Key Service Operators and Digital Service Providers implement the so-called "NIS Directive" (Directive 2016/1148) of the European Parliament and the European Council concerning measures for a high common level of security of network and information systems across the EU. The health sector is recognized as one of the most significant sectors in identifying essential services according to defined criteria and prescribing minimum safety standards and obligatory reporting in case of significant incidents.

Provision of health services in specific areas of care is regulated in separate legislation. The key acts include the Medical Practice Act, the Pharmacy Act, the Nursing Act and the Dental Care Act. The quality of health services is regulated in the 2018 Act on Quality of Health and Social Care, entering into force in January 2019. The Social Welfare Act establishes the rights and obligations of people who receive social services, including home assistance to older people (in kind or in cash) and public support in long-term care facilities.

### 2.7.1 *Regulation and governance of third-party payers*

#### 2.7.1.1 MANDATORY HEALTH INSURANCE

The CHIF is the single payer in the mandatory health insurance system. It is overseen by the Governing Council, appointed by the Government. In addition, the Ministry of Health monitors its activities and the State

Audit Office performs regular audits. The Ministry of Health defines the Plan and Programme of Health Care Measures covered by the mandatory health insurance scheme, which are then paid for by the CHIF according to contracts agreed upon with health care providers. These contracts determine the services to be provided, as well as their scope and quality. Privately owned providers can enter into contracts with the CHIF and become part of the publicly funded system.

#### 2.7.1.2 VOLUNTARY HEALTH INSURANCE

Provision of voluntary health insurance, both by the CHIF and private insurers, is regulated by the Voluntary Health Insurance Act of 2006 (and amendments). The CHIF must keep the funds for complementary health insurance separate from the mandatory health insurance funds. All private health insurers must be approved by the Ministry of Health and are supervised by the Financial Services Supervisory Authority.

### 2.7.2 *Regulation and governance of provision*

In addition to the Health Care Act and the Mandatory Health Insurance Act, key legislation regulating the organization of health care provision includes the Voluntary Health Insurance Act, the Act on Safety and Health at Work of 1996, the Act on Institutions (covering non-profit health care institutions), and the Act on Companies (covering for-profit health care institutions). Furthermore, there is legislation on particular branches of health care activities, such as the Medical Profession Act, the Dental Care Act, the Pharmacy Act, the Nursing Act and the Act on Medical Biochemistry. Regarding the provision of pharmaceuticals and medicinal products, there are the Act on Pharmacies and the Act on Medicinal Products and Devices. In 2019 the Health Care Data and Information Act was passed.

**TABLE 2.1** Overview of the regulation of providers

| | LEGISLATION | PLANNING | LICENSING/ ACCREDITATION | PRICING/ TARIFF SETTING | QUALITY ASSURANCE | PURCHASING/ FINANCING |
|---|---|---|---|---|---|---|
| **Public health services** | Act on health care and related documents | National network of health care providers | Acts for each regulated profession, Acts on quality of health care | CHIF | Act on quality of health care + CHIF | CHIF |
| **Ambulatory care (primary and secondary care)** | Act on health care and related documents | National network of health care providers | Acts for regulated professions, Acts on quality of health care | CHIF + professional chamber | Act on quality of health care + CHIF | CHIF |
| **Inpatient care** | Act on health care and related documents | National network of health care providers | Acts for regulated professions, Acts on quality of health care | CHIF + professional chamber | Act on quality of health care + CHIF | CHIF |
| **Dental care** | Act on health care and related documents | National network of health care providers | Acts for regulated professions, Acts on quality of health care | CHIF + professional chamber | CHIF | CHIF |
| **Pharmaceuticals (ambulatory)** | Act on medical products | CHIF | Acts for regulated professions, Acts on quality of health care | CHIF | Agency for medical products | CHIF |
| **Long-term care** | Act on health care and social welfare (and related documents) | National network of health care and social welfare providers | Acts for regulated professions, Acts on quality of health care | CHIF | Act on quality of healthcare + CHIF | CHIF |
| **University education of personnel** | Acts on high, college and university education | Acts on high, college and university education | Acts on high, college and university education | – | Acts on high, college and university education | – |

*Source:* Authors' compilation.

#### 2.7.1.2 OWNERSHIP AND GOVERNANCE

Only the Ministry of Health can establish health care institutions such as university hospitals, university hospital centres, national institutes of health and specialized university hospitals. Counties can establish general and specialized hospitals, primary health care centres (there must be at least one primary health care centre per county and at least three in the city of Zagreb), County Institutes of Emergency Medicine, County Institutes of Public Health, outpatient clinics, spa facilities, health care facilities providing home care, palliative care institutions and pharmacies. Specialized hospitals, clinics, spas, health care facilities providing home care, palliative care institutions and pharmacies can also be established by other entities or persons, including from the private sector.

The Ministry of Health decides whether a health care institution meets requirements with regard to premises, staff, and medical and technical equipment, based on the positive opinion of a professional chamber. Institutions that meet these criteria are included in the register of health care institutions.

Each health care institution has a Governing Board. Most of its members are chosen by the founder, with the remaining ones being employee representatives. The Governing Board has a director (appointed and dismissed by the Governing Board with the approval of the Ministry of Health) and a deputy director; one of them is required to be a medical doctor with at least five years' clinical experience. In addition, each health care institution has an Expert Council which advises on professional and technical issues. Expert Councils participate in the planning of health care provision and its supervision.

Health care institutions operating on a for-profit basis are regulated in the same way as all commercial companies. However, the following types of health care institutions cannot operate for profit: university hospital centres, university hospitals, general hospitals, medical institutes and health centres (although for-profit companies may perform certain health care services performed by these institutions). For-profit companies are strictly prohibited from providing certain services, such as blood and tissue collections and organ transplantations, as well as emergency medicine, public health services and epidemiology, school and adolescent medicine, and community nursing.

The 1993 health reform (comprising the Health Care Act and the Health Insurance Act) brought the privatization of primary care provision.

This privatization took two basic forms: private practice in privately owned facilities provided by self-employed doctors contracted by the CHIF and private practice in rented offices of county health centres. The 2018 Health Care Act recognized private practices as one of the organizational forms of primary care providers. These are approved by the Ministry of Health and if a private practice wants to perform within the public health care network (as most of them do), it needs the positive opinion of the CHIF and the professional chamber. Overall, there is a national upper limit of 25% of physicians and nurses in primary care (i.e. general practice, paediatrics and gynaecology) who can be employed by publicly run health centres. At least 75% work independently in group or, mostly, solo practices.

#### 2.7.2.2 QUALITY

Regulation of quality standards in health care institutions (both public and private) is the responsibility of the Ministry of Health. The first pieces of legislation regulating quality were the Act on the Quality of Health and Social Care of 2007 (with later amendments) and the Ordinance on Health Care Quality Standards and their Application adopted in 2011. According to this Ordinance, all health care providers must continuously evaluate and improve the quality of their clinical and non-clinical procedures. Due to its low effectiveness, at the end of 2018 the Government adopted a new Act on Quality in Health Care. The act redefined institutional roles in the area of quality assurance in health and social welfare, merging the Agency for Quality and Accreditation in Health Care and Social Welfare with the Ministry of Health.

The Ministry of Health publishes the Rulebook on Norms and Standards for Provision of Health Care Services, containing, for instance, requirements regarding medical staff and the number of people per medical team. The Ministry gives permission for health care providers and facilities to provide health care services if norms and standards proposed in the Rulebook are being met. Those facilities and providers are in this way given permission to enter into contracts with CHIF. Teams of health inspectors from the Ministry of Health visit health institutions to monitor whether health services are provided in accordance with relevant regulations on organizational and professional standards. Inspections are usually carried out following complaints rather than on a systematic basis. The professional

chambers and the sanitary inspection units in the counties can also carry out inspections. The Croatian Health Insurance Fund also makes inspections (to check whether contractual obligations have been met), and public health care institutions (as budgetary users) are subject to state audits performed by the State Audit Office.

Although the introduction and implementation of external evaluations of the quality of health services are one of the proclaimed goals of the National Health Care Strategy 2012–2020, no hospital has been accredited so far. CHIF has introduced some quality indicators, financially rewarding providers meeting the benchmark standards. Furthermore, there are many quality improvement programmes that providers can join on a voluntary basis.

## 2.7.3 *Regulation of services and goods*

### 2.7.3.1 BASIC BENEFIT PACKAGE

The Health Care Act, the Mandatory Health Insurance Act and the Plan and Programme of Health Care Measures financed from mandatory health insurance define a generous benefits package. The Mandatory Health Insurance Act does not specifically define which services are covered; instead, it defines a negative list of services that are not reimbursed. In practice, the scope of covered services has grown, as new services and pharmaceuticals have been included in CHIF's reimbursement lists.

### 2.7.3.1 HEALTH TECHNOLOGY ASSESSMENT

The 2007 Act on Quality of Health and Social Care established the Agency for Quality and Accreditation in Health Care and Social Welfare (merged with the Ministry of Health in 2019), with health technology assessment (HTA) as one of its responsibilities. Formal activities in the field of HTA began in October 2009 within its Department for Development, Research and Health Technology Assessment. The Department was responsible for establishing a system for the assessment and evaluation of new and existing health technologies, and for establishing a database of assessed technologies.

In February 2011 the Agency issued the first Guideline for HTA Process and Reporting. Between 2009 and 2019, when the Agency was merged with the Ministry of Health, it issued almost one hundred HTA studies. In practice, however, HTA activities were not a priority for the Agency, which was mainly concerned with quality control of hospitals.

## 2.7.4 *Regulation and governance of pharmaceuticals*

The key act regulating pharmaceuticals is the 2013 Act on Pharmaceuticals. It regulates issues such as pharmaceutical production, registration and marketing, labelling, classification, supervision and pharmacovigilance.

### 2.7.4.1 PHARMACEUTICAL PRODUCTS

The Agency for Medicinal Products and Medical Devices (HALMED), established as an independent agency at the end of 2003 and supervised by the Ministry of Health, is responsible for granting market authorizations for pharmaceutical products. Since the country's accession to the EU, all marketing authorization approvals following the EU Centralized Procedure automatically apply to Croatia as well. HALMED is also responsible for overseeing the quality, efficacy and safety of pharmaceutical products and for monitoring adverse drug reactions and quality defects (of finished products and products in clinical trials). If necessary, it may carry out urgent recall procedures.

### 2.7.4.2 PHARMACOVIGILANCE

According to the 2008 Act on Medicinal Products, pharmacovigilance activities are part of the mandate of HALMED. Marketing authorization holders are legally required to continuously monitor the safety of their products and to report to HALMED. There are also laws regarding the monitoring of adverse drug reactions in Croatia. All physicians who observe adverse drug reactions in patients are required to report them to HALMED.

#### 2.7.4.3 WHOLESALERS AND PHARMACIES

HALMED issues licences for the wholesale and retail distribution of pharmaceuticals. The Chamber of Pharmacists gives an opinion on whether a pharmacy can be established in a given geographical area and the Ministry of Health decides where a pharmacy is to be established. Pharmacies can be owned by individual persons or institutions.

#### 2.7.4.4 PATENT PROTECTION

Legal provisions that grant patents to manufacturers cover pharmaceuticals, laboratory supplies, medical supplies and medical equipment. Intellectual property rights are managed and enforced by the State Office for Intellectual Property. National legislation implements the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), as Croatia is a member of the World Trade Organization (WTO). Amendments to industrial and intellectual property legislation introduced between 2003 and 2011 harmonized Croatia's intellectual property laws with EU law.

#### 2.7.4.5 ADVERTISING

All applicants to reimbursement lists are obliged to enter into a uniform Agreement on Ethical Promotion of Medicines and risk substantial financial penalties for unethical promotion (Vončina et al., 2012). Direct advertising of prescription medicines to the public is prohibited. The pharmaceutical inspection department of the Ministry of Health supervises adherence of advertising to national legislation.

#### 2.7.4.6 GENERIC SUBSTITUTION

Substitution of generic equivalents that have the same or a lower price at the point of dispensing than paid by the CHIF is allowed in public and private sector facilities, but it is not mandatory (Ministry of Health and Social Welfare, 2011). Incentives for generic promotion are not considered necessary, since the CHIF pays the reference prices and, consequently, most manufacturers lower their prices to avoid co-payments (Vogler et al., 2011).

#### 2.7.4.7 MAIL ORDER/INTERNET PHARMACIES

Mail order or Internet trading of pharmaceuticals is not permitted, with the exception of non-prescription pharmaceuticals.

#### 2.7.4.8 REGULATION OF COUNTERFEIT DRUGS

Croatia is subject to the EU Directive on Counterfeit Medicines, which obliges all participants in the drug supply chain to introduce safety features from 9 February 2019 onwards that comprise a unique identifier to be affixed to each packaging of prescription medicines and a protection against the opening of the outer packaging.

#### 2.7.4.9 CLAWBACK SYSTEMS

In 2009 the CHIF introduced various types of financial risk-sharing agreements, particularly for expensive products, in order to enable market access for new medicines but keep control over expenditure. In the case of innovative medicinal products, the CHIF usually proposes payback agreements in order to meet the maximum price requirement, but also cross-product agreements by which the market authorization holder is obliged to decrease the price of another of its products in order to ensure overall unchanged expenditure for the CHIF.

### 2.7.5 *Regulation of medical devices and aids*

HALMED is responsible for granting licences for wholesale distribution of medical devices, retail sale in specialized retail shops, and import and export. It maintains a register of medical device manufacturers and a register of medical devices, assesses incidents and the safety of patients in clinical trials of medical devices, and may carry out urgent recall procedures. Importers may supply medical devices only to wholesalers. Only legal persons holding HALMED's wholesale distribution authorization may carry out wholesale distribution of medical devices. The Ministry of Health supervises the implementation of the provisions of the 2013 Medical Devices Act and ensuing regulations through pharmaceutical inspection.

# 2.8 Person-centred care

## 2.8.1 *Patient information*

The Government's website, as well as the websites and helplines of the Ministry of Health, the CHIF, hospitals and other health care institutions, institutes of public health and NGOs (including patients' associations), provide key information related to publicly funded health services and patient rights, including some technical information such as on waiting times and available treatments. Comparative information on providers is still missing. The CHIF's new contracting model is focused on monitoring key performance and quality indicators and it can be expected that more comparisons among providers will be publicized in the future, potentially leading to improved quality and user experience.

**TABLE 2.2** Patient information

| TYPE OF INFORMATION | IS IT EASILY AVAILABLE? | COMMENTS |
|---|---|---|
| Information about statutory benefits | Yes | / |
| Information on hospital clinical outcomes | No | / |
| Information on hospital waiting times | Yes | For certain diagnostic and therapeutic procedures, link available through CHIF. |
| Comparative information about the quality of other providers (e.g. GPs) | No | / |
| Patient access to own medical record | Yes, e-citizen service | The service is not yet widely used by patients. |
| Interactive web or 24/7 telephone information | No | For some services or in some institutions, but not systematically. |
| Information on patient satisfaction collected (systematically or occasionally) | No | Occasionally through surveys performed by the CHIF. |
| Information on medical errors | No | / |

*Source:* Authors' compilation.

### 2.8.2 *Patient choice*

The CHIF is the only insurer in the mandatory health insurance system. Patients have no choice of insurer and no choice of statutory benefits package or co-payment level. However, they can choose between the CHIF and several private insurers for complementary and supplementary health insurance.

Every person covered under the mandatory health insurance scheme has the right to choose their own GP and dentist. Females older than 12 years can, in addition, choose their gynaecologist, and parents of pre-school (up to 7 years of age) children can choose a paediatrician, or a GP where there is a lack of paediatricians, for their children. The insured have to register with a GP of their choice but may switch to another one as often as they wish and at no charge. A GP can be chosen independently of one's place of residence (and the same applies to dentists, gynaecologists and paediatricians). The choice of medical specialist and hospital is also not restricted by one's place of residence. Community nurses cover a geographical area of about 5000 inhabitants and cannot be chosen.

Patients have the right to be informed about alternative treatments and to consent to, or refuse, treatment or get a second opinion, except for urgent cases when the patient's life and health are at risk, or when refusal may endanger the health of other people. Medical treatment in a foreign country (by providers approved by the CHIF) used to be covered only in the case of emergencies and when the necessary services were not available in Croatia. This right was expanded upon Croatia's EU accession and EU Directive 2011/24/EU on patient rights in cross-border health care.

**TABLE 2.3** Patient choice

| TYPE OF CHOICE | IS IT AVAILABLE? | COMMENTS |
|---|---|---|
| **CHOICES AROUND COVERAGE** | | |
| Choice of being covered or not | No | Nearly everyone is covered by mandatory health insurance. |
| Choice of public or private coverage | No | Mandatory health insurance is provided by CHIF, while voluntary health insurance can be provided by private insurance companies. |
| Choice of purchasing organization | No | Only for voluntary health insurance. |
| **CHOICE OF PROVIDER** | | |
| Choice of primary care practitioner | Yes | / |
| Direct access to specialists | No | Primary care practitioner's referral is needed for the services to be paid by mandatory health insurance. |
| Choice of hospital | Yes | Except for medical emergencies when a patient is transported to the nearest hospital. |
| Choice to have treatment abroad | Yes | CHIF will cover the costs of the planned treatment of the insured person only if they have been issued a permit for the planned treatment based on the submitted request. Treatment will be approved if it is within the scope of Croatia's mandatory health insurance and if the same treatment cannot be provided in Croatia within a medically justified period, taking into account the health condition and possible course of the insured person's illness. |
| **CHOICE OF TREATMENT** | | |
| Participation in treatment decisions | Yes | Defined by the Patient Rights Protection Act. |
| Right to informed consent | Yes | Defined by the Patient Rights Protection Act. |
| Right to request a second opinion | Yes | Defined by the Patient Rights Protection Act. |
| Right to information about alternative treatment options | Yes | Defined by the Patient Rights Protection Act. |

*Source:* Authors' compilation.

### 2.8.3 *Patient rights*

Patient rights were already guaranteed in the 1993 Health Care Act. The Act provided for a set of rights, including the right to seek protection for patients who considered that their rights had been violated. They could request measures from the health care provider and, if unsatisfied with the measures taken, turn to a relevant professional chamber, the Minister of Health or a competent court. Moreover, in the 1993 Health Care Act patient rights related to the provision of services were set out, such as the right to refuse to be treated by students, the right to food in accordance with their beliefs, the right to perform religious rites during their stay in a health care institution and the right to preparation in the morgue in the case of death.

The Act on the Protection of Persons with Mental Disorders was adopted in 1997 and patient rights were further expanded in the 2004 Patient Rights Protection Act (amended in 2008) (Republic of Croatia, 2004). Following adoption of the 2004 Act, Commissions for the Protection of Patient Rights were established in every county and at national level at the Ministry of Health. The County Commissions monitor violations of individual patient rights and propose measures to protect and promote patient rights in the area of the respective county.

**TABLE 2.4** Patient rights

| | Y/N | COMMENTS |
|---|---|---|
| **PROTECTION OF PATIENT RIGHTS** | | |
| Does a formal definition of patient rights exist at national level? | Yes | / |
| Are patient rights included in specific legislation or in more than one law? | Yes, both | Patient rights are included in a specific Act on Patient Rights but also in the Health Care Act and the Mandatory Health Insurance Act. |
| Does the legislation conform with WHO's patient rights framework? | Yes | / |
| **PATIENT COMPLAINTS AVENUES** | | |
| Are hospitals required to have a designated desk responsible for collecting and resolving patient complaints? | Yes | / |
| Is a health-specific Ombudsperson responsible for investigating and resolving patient complaints about health services? | No | There is an Ombudsperson at the national level, but it is not a health-specific post. |
| Other complaint avenues? | Yes | Commissions for the Protection of Patient Rights at the county level. |
| **LIABILITY/COMPENSATION** | | |
| Is liability insurance required for physicians and/or other medical professionals? | Yes | / |
| Can legal redress be sought through the courts in the case of medical error? | Yes | / |
| Is there a basis for no-fault compensation? | Yes | There is a general (not specified for health care per se) basis for no-fault compensation stated in the 2018 Law on obligatory relations. |
| If a tort system exists, can patients obtain damage awards for economic and non-economic losses? | Yes | / |
| Can class action suits be taken against health care providers, pharmaceutical companies, etc? | No | / |

*Source:* Authors' compilation.

#### 2.8.3.1 COMPLAINTS PROCEDURES

Patients who consider that one of their rights has been violated may make a verbal or written complaint to the head of the health care institution in which the alleged violation took place. If the head of the health facility does not react within eight days, patients have the right to submit a complaint to the County Commission for the Protection of Patient Rights. This Commission is obliged to inform the patients of all measures taken in relation to their complaint. Patients' inquiries are received via the "ask us" mailbox of the Ministry.

### 2.8.4 *Patients and cross-border health care*

Cross-border health care is not a major issue in Croatia.

Since joining the EU Croatia has applied EU regulations with regard to the coordination of its social security system with other EU and EEA countries and Switzerland. People from Croatia who are covered by the mandatory health insurance scheme have been able to use their European Health Insurance Card to access necessary health care in other EU countries, as well as other benefits according to the regulations. Croatian pensioners residing in EU/EEA countries are entitled to the full scope of benefits in kind in the country of residence, at the expense of the CHIF.

Croatia has also implemented the EU Directive on the application of patient rights in cross-border health care 2011/24 into national legislation, so people in Croatia who are covered by the mandatory health insurance scheme can use health care benefits in kind in other EU countries. Costs of these benefits are born by patients and then refunded to them by the CHIF, according to the Croatian tariffs for similar procedures.

In addition, national legislation regulates that every insured person is entitled to treatment abroad (both in EU and non-EU countries) for cases where such treatment cannot be provided by contracted health care providers in Croatia, but can be performed abroad. This procedure is usually used in highly complicated and serious cases.

Croatia receives a large number of tourists from the EU who use necessary health care during their visit, on the basis of their European Health

Insurance Cards. Health services are provided by health care institutions that have a contract with the CHIF. All EU citizens can use health care in Croatia within the scope regulated by the EU Directive, depending on the nature and length of their stay in Croatia (pensioners, posted workers, students, etc.).

Patients coming from abroad with the intention to use health services in Croatia are mainly motivated by lower prices for some services, such as dental care or cosmetic surgery. This type of health care is usually provided in private facilities, and paid for directly by patients.

# 3

# Financing

## Summary


- The proportion of GDP spent on health stood at 6.8% in 2018, a share that was smaller than in most western European countries, but higher than in seven other EU Member States.

- The per capita health expenditure in Croatia was US$1876 in 2018 (adjusted for differences in purchasing power), placing it among the four lowest spenders in the EU.

- While the share of public expenditure as a proportion of current health expenditure decreased to 83.2% in 2018, this was still high compared to most countries in the WHO European Region, reflecting a tradition of solidarity in health care financing and the continued importance of health care on the Croatian policy agenda.

- Out-of-pocket (OOP) payments stood at 10.5% of current health expenditure in 2018, and accounted for the majority of private expenditure on health. This level was significantly below the EU average for OOP spending (15.5%).

- Out-of-pocket spending on health as a share of final household consumption was 1.3% in 2018, which was the lowest share of all EU countries and well below the EU average of 3.3%.

- In 2018, 12.3% of the total state budget was allocated to health care. Most of it (over 90%) was allocated to the CHIF to finance goods and services covered within the mandatory health insurance scheme.

## 3.1 Health expenditure

The proportion of GDP spent on health stood at 6.8% in 2018 (Table 3.1, Figure 3.1), a share that was below the EU average of 9.6%. This translated into US$1876 per capita (adjusted for differences in purchasing power) in 2018, placing Croatia among the four lowest spenders in the EU.

**TABLE 3.1** Trends in health expenditure in Croatia, 2000–2018, selected years

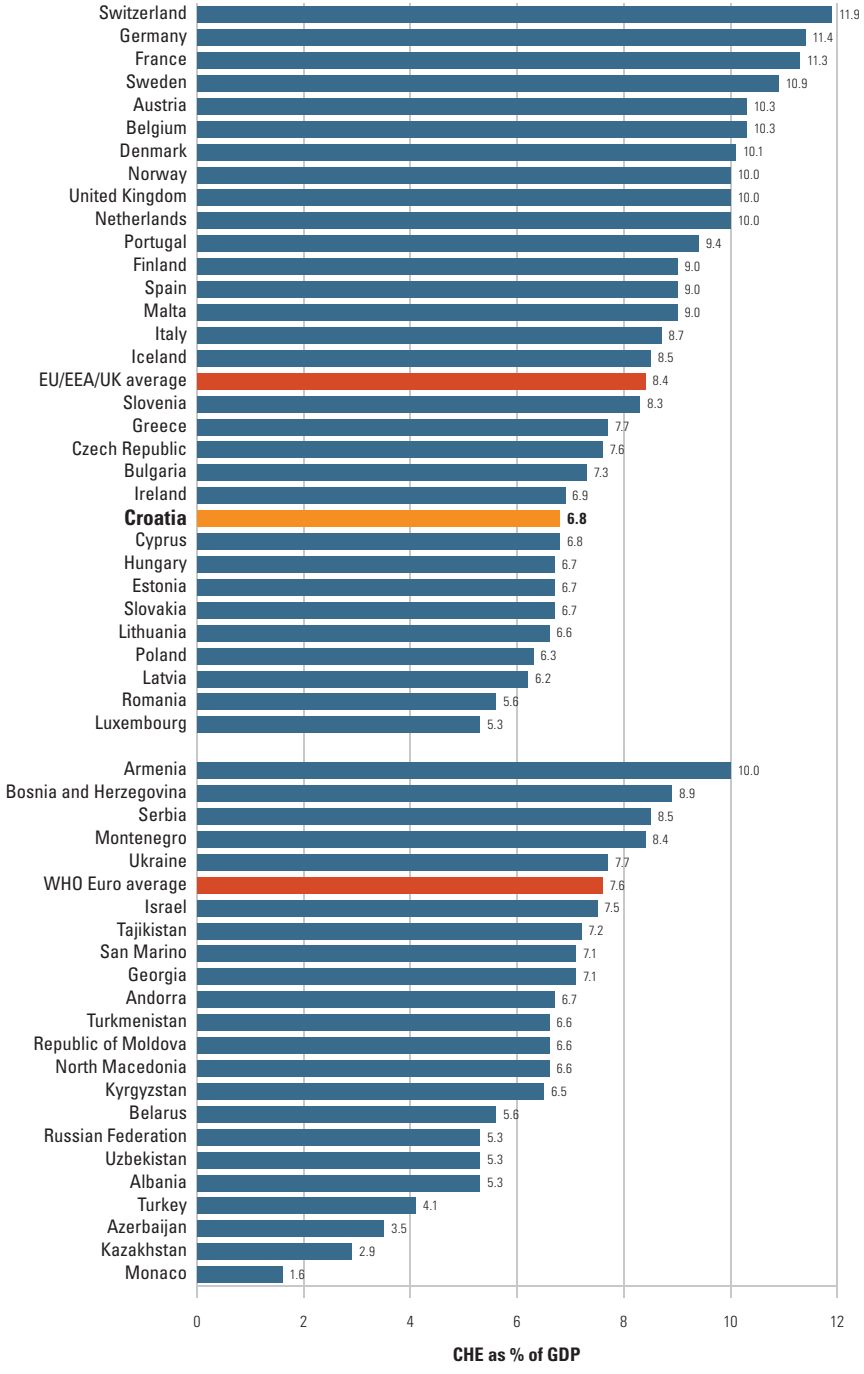
| | 2000 | 2005 | 2010 | 2015 | 2018 |
|---|---|---|---|---|---|
| Current health expenditure (per capita in PPP US$) | 811 | 1 057 | 1 599 | 1 554 | 1 876 |
| Current health expenditure (as % GDP) | 7.7 | 6.9 | 8.1 | 6.8 | 6.8 |
| Public expenditure on health (as % of CHE) | 85.0 | 85.0 | 83.4 | 83.1 | 83.2 |
| Private expenditure on health (as % CHE) | 15.0 | 15.0 | 16.6 | 16.9 | 16.8 |
| Out-of-pocket spending (as % of CHE) | 13.9 | 13.4 | 14.0 | 10.9 | 10.5 |
| Voluntary health insurance (as % of CHE) | 0.0 | 0.6 | 0.6 | 4.4 | 3.8 |
| General government expenditure on health (as % of general government expenditure) | 13.8 | 12.5 | 13.9 | 11.6 | 12.3 |
| Public expenditure on health (as % GDP) | 6.5 | 5.9 | 6.8 | 5.6 | 5.7 |

*Source:* WHO, 2021a.

*Notes:* Public expenditure refers to domestic general government health expenditure; CHE – current health expenditure.

The share of public expenditure as a proportion of current health expenditure was 83.2% in 2018 (Table 3.1), higher than most countries with comparable levels of health spending. Out-of-pocket (OOP) payments accounted in 2018 for 10.5% of health spending, which was below the EU average (15.6%), while voluntary health insurance accounted for 3.8% in 2018, a larger share than in many EU countries.

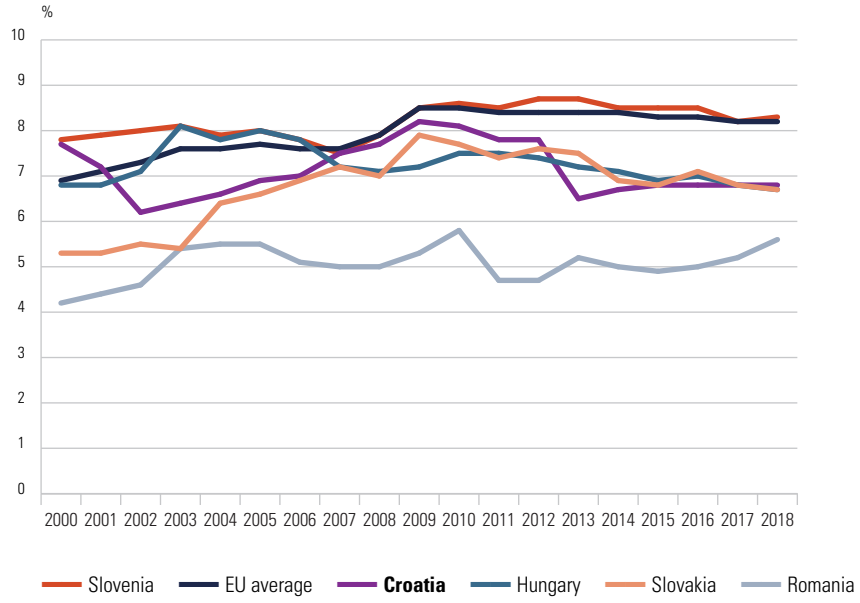
**FIG. 3.1** Current health expenditure as a share (%) of GDP in the WHO European Region, 2018




*Source:* WHO, 2021a.

Between 2000 and 2018 health expenditure as a share of GDP fluctuated in Croatia but is now lower than in some comparator countries (Figure 3.2).

**FIG. 3.2** Trends in health expenditure as a share (%) of GDP in Croatia and selected countries, 2000–2018

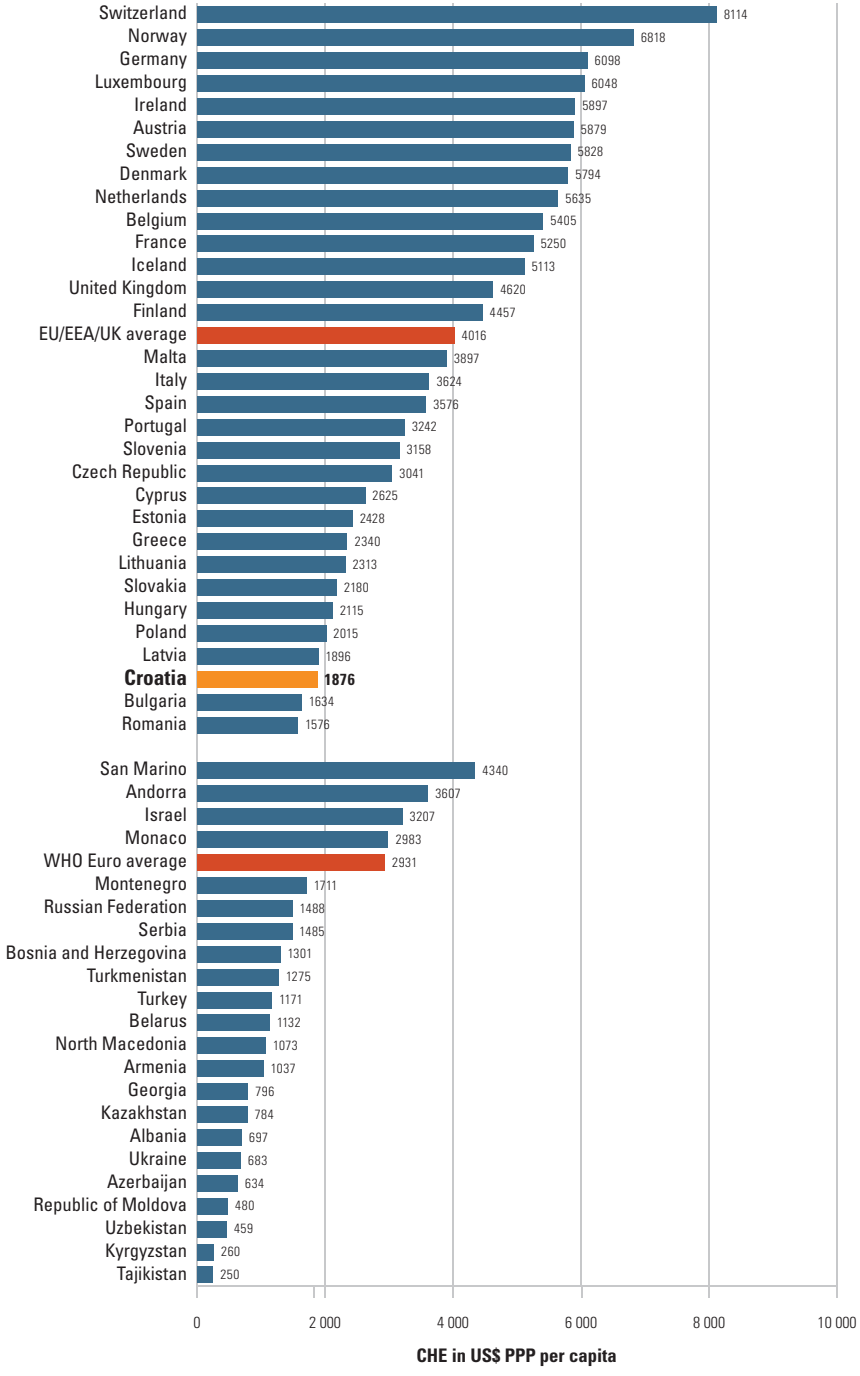



*Source:* WHO, 2021a.

In 2018 per capita health expenditure in Croatia was lower than in most other EU Member States (Figure 3.3). While the share of public expenditure as a proportion of current health expenditure decreased between 1995 and 2018 (Table 3.1) to 83.2%, it is still very high compared to other countries in the WHO European Region (Figure 3.4), reflecting the tradition of solidarity in health care financing and the continued importance of health care on the Croatian policy agenda.

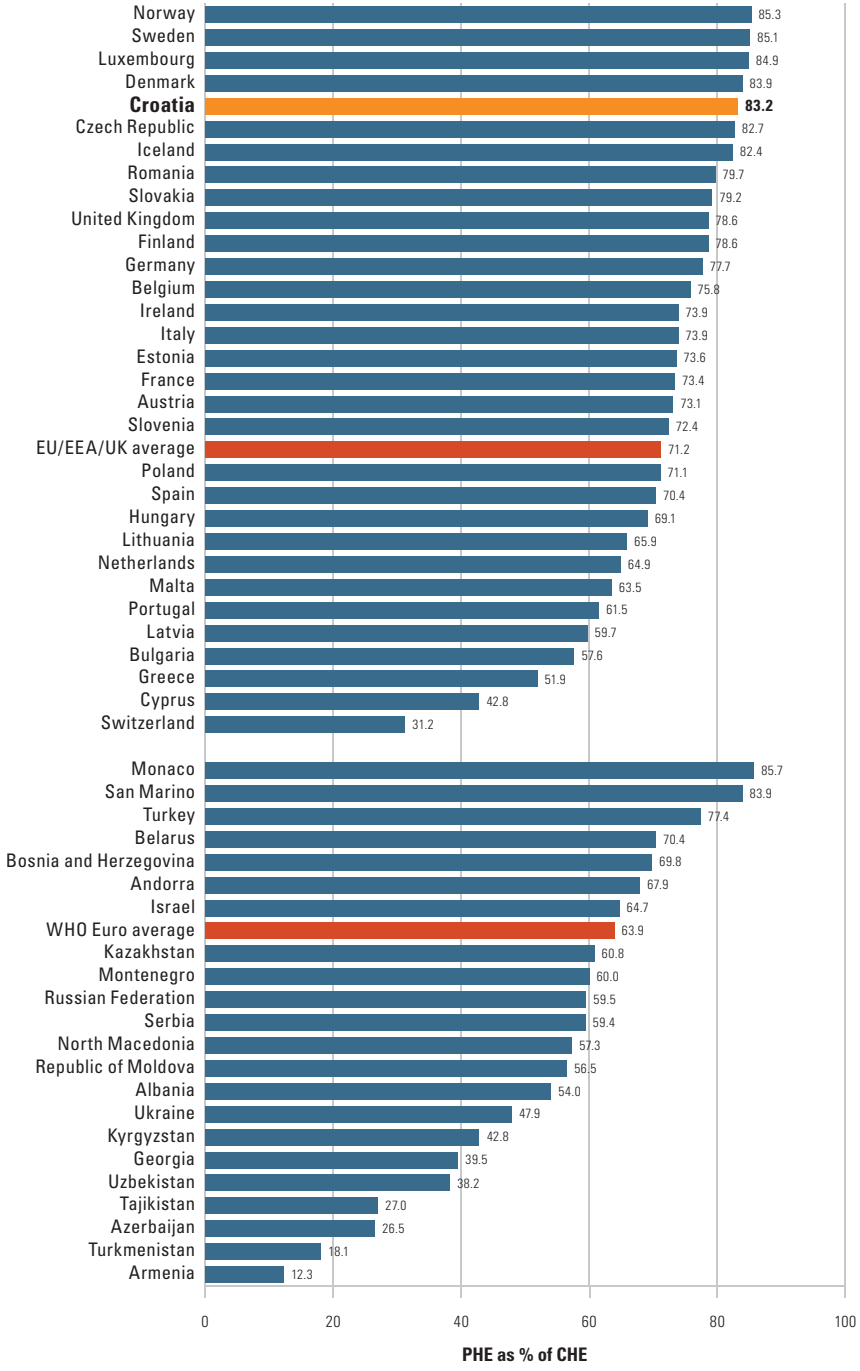
However, the role of private financing has increased slightly in recent years to 16.8% in 2018 (Table 3.1). Out-of-pocket expenditure accounted for all private health spending until the early 2000s as VHI was not available. Even today, OOP payments account for the majority of private health expenditure and constitute the second most important source of health care financing.

**FIG. 3.3** Health expenditure per capita in the WHO European Region, 2018



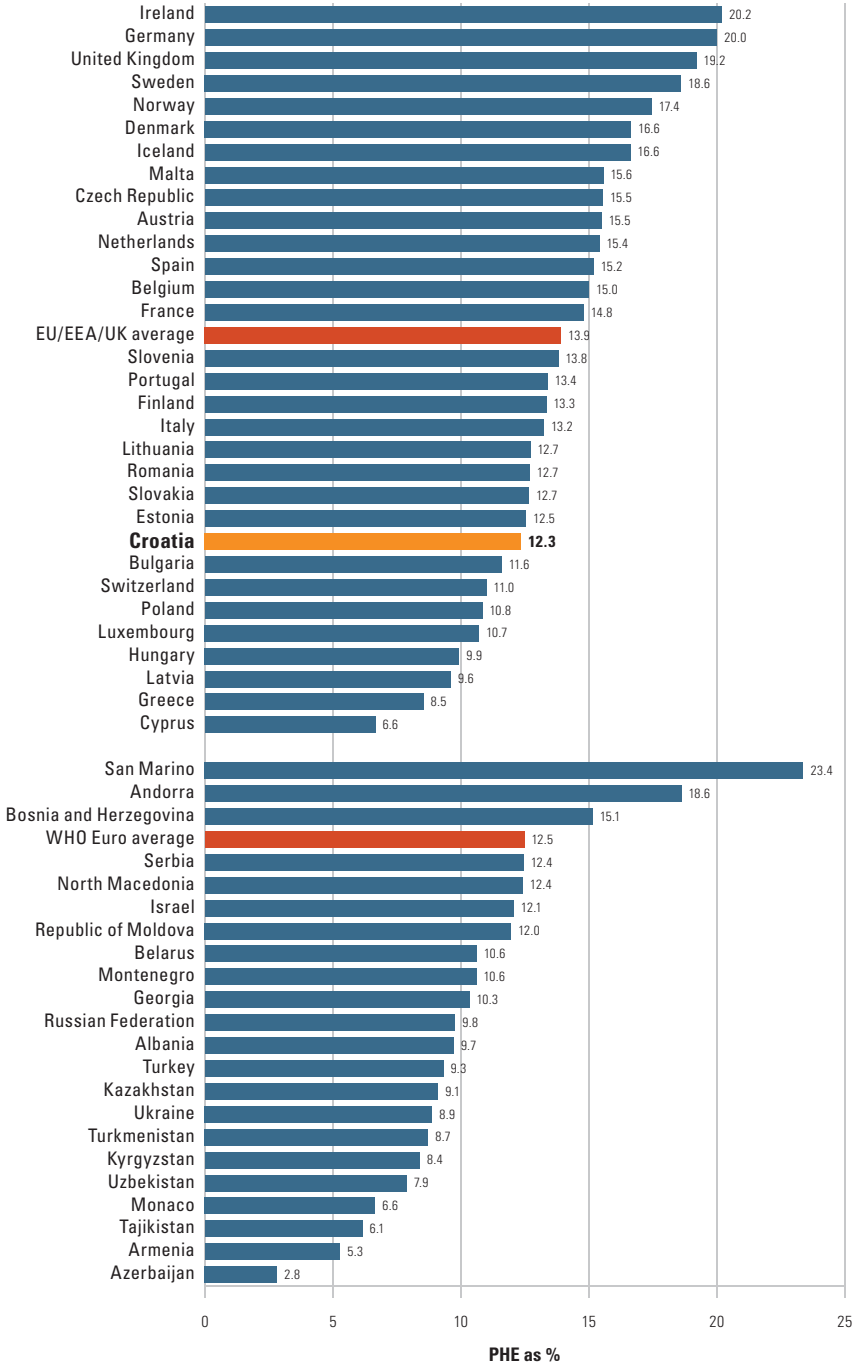

*Source:* WHO, 2021a.

**FIG. 3.4** Public expenditure on health as a share (%) of current health expenditure in the WHO European Region, 2018




*Source:* WHO, 2021a.

**FIG. 3.5** Public expenditure on health as a share (%) of general government expenditure in the WHO European Region, 2018




*Source:* WHO, 2021a.

*Note:* Public expenditure includes government schemes and compulsory contributory health care financing schemes; these data differ from domestic general government health expenditure.

Most of the CHIF's expenditure is spent on health care goods and services (around 80% on the provision of health care services within the mandatory health insurance system, while complementary insurance accounted for about 5% of the CHIF's spending in 2018), while spending on sick leave, maternity and other compensations made up almost 11% of CHIF expenditure (CHIF, 2019). These shares have remained fairly stable since 2007. Inpatient care, at approximately 35.6% of total CHIF expenditure in 2018, accounted for the largest proportion of the CHIF's health care spending, followed by prescription drugs (almost 14%) and primary care (just over 16%).

A breakdown of expenditure by health care function and financing scheme is provided in Table 3.2.

The budget of the Ministry of Health is mainly used for funding investments (see Section 4.1) and public health programmes.

However, some major limitations of available data on health expenditure in Croatia have to be noted. There are public debates but also disagreements between experts on the levels of health expenditure. Vončina et al. state that, while regular expenditure within the health care budget is presented transparently, certain health care costs are "hidden" as arrears (unpaid overdue debt). They argue that since arrears are substantial, amounting to more than 10% or even 15% of current health expenditure, the expenditure data do not provide an exact representation of reality (World Bank, 2018; Vončina et al., in press). On the other hand, according to the methodology of the System of Health Accounts, all expenditure needs to be recorded in the year in which it is spent.

**TABLE 3.2** Expenditure for selected health care functions by health care financing schemes, 2018 (% of CHE)

| | GOVERNMENT SCHEMES AND COMPULSORY CONTRIBUTORY HEALTH CARE FINANCING SCHEMES | GOVERNMENT SCHEMES | COMPULSORY CONTRIBUTORY HEALTH INSURANCE SCHEMES AND COMPULSORY MEDICAL SAVING ACCOUNTS | VOLUNTARY HEALTH CARE PAYMENT SCHEMES | HOUSEHOLD OUT-OF-POCKET PAYMENTS | ALL FINANCING SCHEMES |
|---|---|---|---|---|---|---|
| Inpatient curative and rehabilitative care | 18.91 | 1.04 | 17.87 | 1.66 | 0.59 | **21.17** |
| Day curative and rehabilitative care | 7.46 | 0.29 | 7.17 | 0.32 | 0.05 | **7.82** |
| Outpatient curative and rehabilitative care | 21.76 | 0.64 | 21.13 | 1.99 | 3.54 | **27.3** |
| Home-based curative and rehabilitative care | 0.31 | 0.0 | 0.31 | 0.05 | 0.0 | **0.36** |
| Long-term care (health) | 2.88 | 0.56 | 2.32 | 0.02 | 0.13 | **3.03** |
| Ancillary services (non-specified by function) | 8.75 | 0.25 | 8.5 | 0.82 | 0.2 | **9.77** |
| Medical goods (non-specified by function) | 16.61 | 0.03 | 16.58 | 0.64 | 5.97 | **23.22** |
| Preventive care | 2.83 | 0.57 | 2.27 | 0.33 | 0.0 | **3.16** |
| Governance and health system and financing administration | 1.86 | 0.63 | 1.23 | 0.83 | 0.0 | **2.69** |
| Other health care services unknown | 1.47 | 0.15 | 1.33 | 0.01 | 0.0 | **1.48** |
| **Total** | **82.8** | **4.2** | **78.7** | **6.7** | **10.5** | **100.0** |

*Source:* Eurostat, 2021.

## 3.2 Sources of revenues and financial flows

The key sources of the CHIF's revenue are mandatory health insurance contributions (accounting for 79.5% of total revenues in 2018), and funding from the state budget (accounting for 12.4% of revenues). Revenue from mandatory health insurance contributions and the state budget is used to finance the CHIF's so-called "regular activities", i.e. the financing of health care, compensations and administration of the CHIF. Revenue from

the so-called "special regulations" (accounting for 8% of revenues in 2018) comprises complementary health insurance in the CHIF, co-payments from patients who do not have complementary health insurance, contributions from mandatory car insurance (to cover the cost of health care due to traffic accidents), and payments from other countries for services provided to foreign citizens.

Until 2015 CHIF's financing was integrated in the State Treasury and the state budget. Defining the allocation of public resources for the provision of health care services financed by the CHIF (i.e. CHIF's budget) was part of the national state budgeting procedure managed by the Ministry of Finance. Regardless of legal requirements, CHIF's budget had over the years been subject to political debates and to negotiations between the Ministry of Health, the CHIF and the Ministry of Finance, which had the final decision on the allocation.

In January 2015 the CHIF, following the 2013 Mandatory Health Insurance Act, left the state budget. The separation from the state budget in 2015 aimed to give the CHIF more autonomy in the management of funds, provide a clearer focus on resources devoted to health care, give a clear view of transfers of health care funds from the state budget, and achieve a more transparent management of funds (CHIF, 2014). The following revenues were excluded from the state budget: income from mandatory health insurance contributions, income from complementary health insurance, and other CHIF income under special regulations. All these revenues and expenses are an integral part of the CHIF financial plan which needs to be approved by Parliament.

Only slightly more than a third of the population (37% in 2018), consisting of the economically active, is liable to pay full mandatory health insurance contributions. The financing of the mandatory health insurance system seems to be regressive, as health insurance contribution rates do not increase with income (CHIF, 2019). On the other hand, those without paid employment are also covered by the mandatory health insurance system through a number of means, introducing a progressive element (see Section 3.3.1).

All Croatian citizens and residents have the right to health care through the mandatory health insurance scheme. Although the breadth and scope of the scheme are broad, patients must contribute to the costs of many goods and services. There are, however, exemptions for vulnerable population groups (e.g. children, preventive care for school children and students, women, pregnant women, assisted reproductive technologies, preventive care

for older people, people with disabilities, and patients with HIV, chronic psychiatric diseases, cancer, occupational diseases, dialysis, transplantations, emergency medicine, in-house treatments and vaccination). Since 2003 the formal right to free health care services has diminished, through both increasing co-payments for virtually all services and the rationing of services. Complementary health insurance is also available, which mainly covers user charges in the mandatory health insurance system. Certain population groups (e.g. people with disabilities, organ donors, frequent blood donors, students and people on low incomes) have the right to free complementary health insurance membership in the CHIF and their respective contributions are financed from the state budget (amounting to over 60% of people with complementary voluntary health insurance in the CHIF).

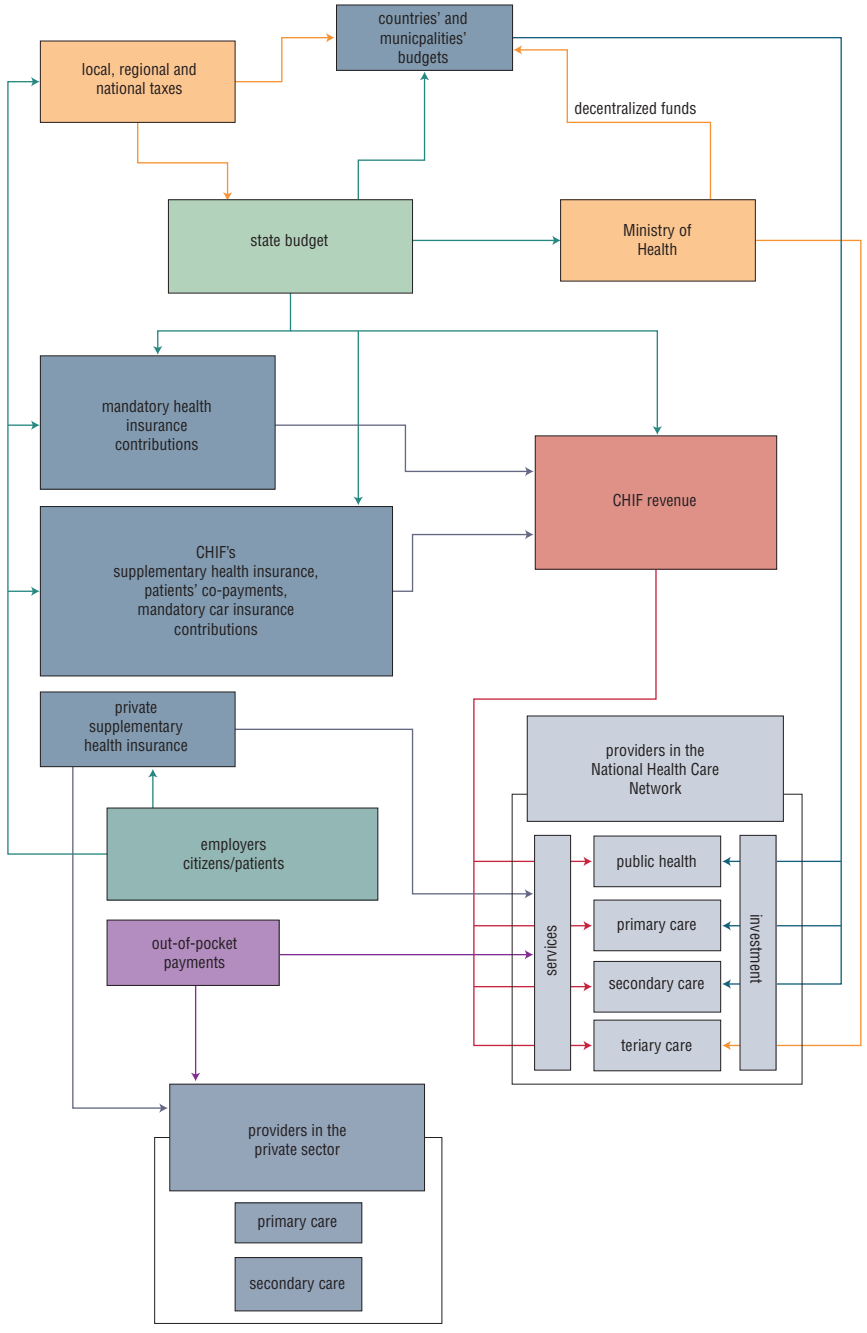
Except for pharmaceuticals, no explicit positive lists of services and goods are in place. The Mandatory Health Insurance Act only defines which benefits should be excluded (personal wishes of the patients above the standards of care, experimental treatments, services provided in non-contractual institutions and aesthetic medicine). Basic health care services that are covered under the mandatory health insurance scheme are defined by the Ministry of Health, but since all medical indications are covered by mandatory health insurance, the CHIF price list of services essentially sets out which health services are covered by mandatory health insurance.

The Ministry of Health defines the National Health Care Network of health care centres, hospitals and outpatient practices. This network provides the basis on which the CHIF contracts with individual and institutional health care providers (both public and private) for the provision of health services within the scope of mandatory health insurance. The National Health Care Network does not list the names of health care institutions, with the exception of hospitals, institutes of public health and primary health care centres, but rather the required number of outpatient care teams (i.e. teams consisting of one medical doctor and one nurse) in the Network.

New contracting models were implemented in 2013–2015 with the aim of incentivizing health care providers to improve quality of care and patient satisfaction and encouraging the provision of certain types of care (e.g. prevention) through a mixture of provider payment mechanisms. In 2013 a new model of payment was introduced for primary care providers in four main specialties and in 2015 a new model was introduced for hospitals, with a fixed and a variable part of revenue with bonus payments based on the achievement of set indicators.

Key financial flows in the health system are presented in Figure 3.6.

**FIG. 3.6** Financial flows




*Source:* Authors' compilation.

## 3.3 Overview of the statutory financing system

Basic health insurance, also known as mandatory health insurance, covers virtually the whole population. Co-payments are applied to statutory services within the mandatory health insurance package. These have to be either paid out of pocket or covered by complementary health insurance. Certain groups, including people under 18 years, students, military personnel, war veterans, the unemployed, people with disabilities and blood donors (with more than 35 donations for men and 25 donations for women), are exempt from paying co-payments and the CHIF is compensated from the state budget for the amount equivalent to the value of exemptions.

Overall, the health system is financed from both public (insurance contributions and taxation) and private (OOP payments and voluntary health insurance) sources. Mandatory health insurance contributions account for the majority of funds and are pooled by the CHIF. The key contributors are employees, the self-employed and farmers, although only about a third of the population is liable to pay full health care contributions. Certain vulnerable categories of the population are financed from the payroll contributions of contributing members within the family or transfers from central or local government.

The CHIF redistributes these funds to health care providers, according to previously agreed contracts. The CHIF also collects premiums for complementary voluntary health insurance, but revenue from these premiums is separate from mandatory health insurance revenue.

### 3.3.1 *Coverage*

#### Breadth

According to the Health Care Act, all Croatian citizens have the right to health care and, according to the Mandatory Health Insurance Act, opting out of the mandatory health insurance scheme is not possible. All persons with residence in Croatia, as well as foreigners with permanent residence permits, must be insured in the mandatory health insurance scheme, unless an international agreement on social insurance states otherwise. Membership is also mandatory for temporary foreign residents residing in Croatia for

more than three months. Foreigners with temporary residence are required to possess mandatory health insurance coverage for all family members who are resident with them in Croatia. Insured persons coming from countries that have concluded agreements on social security regulating health care delivery during their stay in Croatia have access to health services on the basis of the certificate of entitlement issued by the insurer from abroad. Since Croatia's EU accession, this applies to all EU Member States.

Dependent family members are covered through the contributions made by working family members. Self-employed people must pay their own contributions in full. Vulnerable groups, such as old-age pensioners, people with disabilities, the unemployed and low-income earners, are exempt from payments. War veterans and military personnel are also exempt; their mandatory health insurance coverage is financed from the State Treasury or the Ministry of Defence (in the case of active members of the military forces and other employees of the Ministry of Defence). Insurance contributions for persons under 18 years are covered by the state. Students and unemployed persons between 18 and 26 years are insured through their parents' insurance. In 2018 more people had mandatory health insurance than there were residents in the country, most likely because of Croatians living in other countries (e.g. Bosnia and Herzegovina) but still remaining in the mandatory health insurance system (CHIF, 2019; Croatian Bureau of Statistics, 2019).

All insured persons are issued a card with an insurance number, which is used for checking their insurance status when accessing health services. Their insurance status is verified through the Central Health Information System of the Republic of Croatia (CEZIH). Those who are not formally insured in the CHIF will only have publicly funded access to emergency care.

Complementary health insurance is voluntary and purchased individually from either the CHIF or a private insurer (see Section 3.5). It mainly covers user charges in the mandatory health insurance system. However, according to the 2006 Voluntary Health Insurance Act (and later amendments) the following population groups have the right to free complementary health insurance membership in the CHIF and their respective contributions are financed from the state budget: those with severe physical or mental disabilities who are unable to independently perform age-appropriate activities; human organ donors; blood donors with more than 35 (men) or 25 (women) donations; students aged 18 to 26 years; and persons whose total annual income (calculated per family member per month) does not exceed

45.6% of the budgetary salary base defined by the government.

In 2019 approximately 76% of the population had complementary health insurance from the CHIF (contracted insurance policies) and 16% had complementary health insurance covered from the state budget (CHIF, 2020a).

## Scope

The Act on Mandatory Health Insurance gives the insured the right to health services and to financial compensation. The Act mentions broad categories of covered health services and medical goods, and those services should be more clearly defined in the Plan and Programme of Health Care Measures covered by Mandatory Health Insurance. However, no explicit positive lists of services and goods exist, apart from for pharmaceuticals, which means that there is no detailed definition of the basic benefits basket.

As the main purchaser of health services, the CHIF, in cooperation with medical associations, determines the price list of all health services that are covered under the mandatory health insurance scheme. Decisions are made with approval of the Ministry of Health.

There are two positive lists of pharmaceuticals provided within the statutory system: a basic list (with pharmaceuticals provided free of charge to the patient) and a complementary list (with pharmaceuticals provided against co-payments). These lists are published by the CHIF and can be updated several times a year. Decisions on the inclusion of drugs and medical appliances in the reimbursement lists are made independently by the Commission for Drugs and Medical Appliances and the Department for Drugs and Medical Appliances that are organized by the CHIF. They are supported by budget impact analyses, which are usually prepared by the pharmaceutical companies that apply for reimbursement.

The following services are excluded from mandatory health insurance coverage: reconstructive cosmetic surgery (except for aesthetic reconstruction of congenital anomalies, breast reconstruction after mastectomy, and cosmetic reconstruction after severe injury); treatment of voluntarily acquired sterility; surgical treatment of obesity (except for cases of morbid obesity); experimental treatment; and treatment of medical complications arising from the use of health care beyond that covered under the mandatory health insurance scheme.

Under the 2002 amendment to the 1993 Health Insurance Act, some modest reductions in the level of compensation were introduced, but the benefits remained essentially unchanged. Recent years have seen slight decreases in the CHIF's spending on maternity and sick leave benefits. As sick leave and maternity benefits are more appropriately regarded as employment rather than health care benefits, their administration is being shifted away from the CHIF, allowing the sick leave benefits to be integrated into labour and social welfare programmes and the CHIF to concentrate on its core functions. This decision was made in 2012, but had still not been implemented by 2019. Because of the high rates of sick leave and their long duration, the CHIF has since 2013 conducted regular controls. In 2018, out of 5860 insured persons on sick leave who were examined by the CHIF, sick leave was discontinued for 40% (CHIF, 2019).

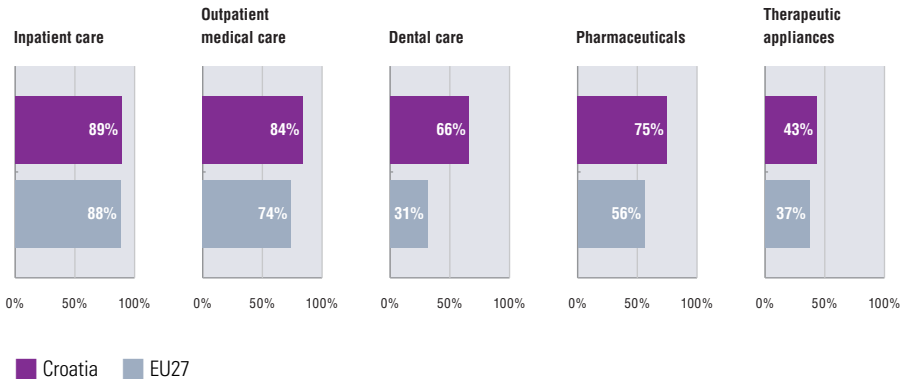
**BOX 3.1** What are the key gaps in coverage?

Population coverage under the mandatory health insurance system is nearly universal, as all citizens and residents have the right to health care through the mandatory health insurance scheme. The scope of coverage is also broad, with most health services and medical goods publicly covered. The main gaps in coverage relate to the depth of the benefits package, as patients must contribute to the costs of many goods and services through co-payments. There are, however, exemptions from co-payments for vulnerable population groups. Certain population groups (e.g. people with disabilities) have the right to free complementary health insurance membership in the CHIF and their respective contributions are financed from the state budget. Overall, the share of publicly paid services is greater than the EU average in all areas of care (Figure 3.7).

## Depth

As set out in the Mandatory Health Insurance Act, certain health care goods and services provided to specific population groups are covered in full (100%) by the CHIF. These are: preventive and curative health services for children, pupils and regular students; orthopaedic devices and other medical aids for children up to 18 years (as defined in the CHIF's by-laws); preventive and curative health services for women in the area of family planning, pregnancy monitoring and childbirth; preventive care for people with disabilities and people older than 65 years; mandatory vaccinations; immunoprophylaxis and chemoprophylaxis; prevention and treatment of infectious diseases; laboratory/diagnostic tests within primary care; treatment for chronically ill psychiatric patients; treatment of patients with cancer; treatment of professional diseases and injuries; chemotherapy and radiotherapy; organ transplantations; emergency care (medical assistance, dental care, medical transportation); home visits and home care; palliative care; and sanitary transportation for special categories of patients, such as people with disabilities. Across all areas of care, the public share of expenditure is greater than in the EU (Figure 3.7).

**FIG. 3.7** Public share of spending in different areas of care, 2018




*Source:* OECD/European Observatory on Health Systems and Policies, 2021.

*Note:* Outpatient medical services mainly refer to services provided by generalists and specialists in the outpatient sector. Pharmaceuticals include prescribed and over-the-counter medicines as well as medical non-durables. Therapeutic appliances refer to vision products, hearing aids, wheelchairs and other medical devices.

### 3.3.2 *Collection*

A shift to the collection of all state revenues through a single account (the State Treasury) in 2002 improved the allocation of funds and the control over public finances. Prior to that, resources were collected in various public accounts and there was little transparency about the total amount of resources and their distribution, leading to a situation where some parts of the public sector ran deficits, while others accumulated surpluses. The consolidation into a single account was also intended to improve fiscal discipline and debt management, as well as to provide greater liquidity across all public institutions, including the CHIF. However, for the CHIF itself, this has not been completely achieved.

Mandatory health insurance contribution rates are negotiated between the Ministry of Health, the Ministry of Finance and the CHIF, and ratified by Parliament. The CHIF collects contributions from:

- employees: 16.5% of gross salary since 1 January 2019 (since 2019 the previous employer contribution of 1.7% and the occupational health protection contribution of 0.5% have been discontinued and the health insurance contribution increased from 15% to 16.5%, reducing the total share of CHIF revenues from payroll contribution from 37.2% to 36.5%). The employer is responsible for transferring employee contributions to the CHIF;
- farmers, priests and other religious officials: 7.5% of a proportion of the average salary in the country (this proportion was 35% in 2013);
- pensioners: 3% of the pension income above the average net wage; and
- the state budget: contributions on behalf of the unemployed and prisoners: 5% of the prescribed base budget; 1% of the health insurance contribution of pensioners, if the pension is below the average net wage.

Similar to most other countries with health insurance systems, the rate of mandatory health insurance contributions in Croatia (16.5%) is uniform for the working population, regardless of their salary. This means that the burden of contributions is proportional to salaries. As mentioned above, only slightly more than a third of the population (consisting of the economically

active) is liable to pay the full mandatory health insurance contributions (Table 3.3).

**TABLE 3.3** Composition of persons insured in the CHIF, 2018

| | NUMBER | PERCENTAGE (%) |
|---|---|---|
| Active employees | 1 564 677 | 37.2 |
| Active farmers | 14 155 | 0.3 |
| Pensioners | 1 057 951 | 25.2 |
| Family members | 525 135 | 12.5 |
| Others | 1 041 464 | 24.8 |
| **Total** | **4 203 382** | **100.0** |

*Source:* CHIF, 2019.

Mandatory health insurance contributions accounted for 79.5% of total revenues of the CHIF in 2018, and funding from the state budget for a further 12.4% (including contributions for pensioners, the unemployed, prisoners and revenue from a tax on tobacco products); 8% of revenues came from complementary health insurance in the CHIF, co-payments from patients who do not have complementary health insurance, contributions from mandatory car insurance, and payments from other countries for services provided to foreign citizens.

**BOX 3.2** Is health financing fair?

The main method of raising revenue for the health system in Croatia is the mandatory health insurance system, which is mainly funded from health insurance contributions. The rate of contributions (16.5%) is fixed and does not decrease or increase with earnings or income. This makes it a proportionate form of health financing. However, contributions (including for complementary health insurance) are paid by the state for some groups of the population and the overall share of public funding for health is comparatively high. This introduces an element of fairness and progressivity and helps to protect vulnerable groups of the population from catastrophic and impoverishing health expenditure.

### 3.3.3 *Pooling of funds*

Since 2015 CHIF has collected and pooled funds outside the state budget. All revenues and expenses are an integral part of the CHIF's financial plan that must be adopted by the Parliament. Within the CHIF, hard budgets are set for drugs, health care goods and services, and compensations. Calculations of these hard budgets are mostly based on previous expenditures.

The funds from the state budget that are allocated to the Ministry of Health are distributed mostly to state-owned health facilities. However, some funds are transferred to the local level, with allocations determined by morbidity, mortality and the demographic characteristics of the county populations (see Section 2.5).

### 3.3.4 *Purchasing and purchaser–provider relations*

Health care providers contracted by the CHIF, both private and public, are contracted according to the defined needs in the National Health Care Network. Annually or every three years the CHIF launches a competition for contracts with individual and institutional health care providers for the provision of health services within the scope of mandatory health insurance. The CHIF then pays for health services according to agreed contracts. These contracts specify which services are to be provided, their scope and quality, requirements for cost accounting, and payment terms (including fixed and variable components).

During the contract period, the CHIF supervises the execution of contractual obligations of health care institutions, private medical professionals and suppliers of pharmaceuticals and medical aids. Both financial and medical (e.g. the scope of services provided, adherence to clinical guidelines when prescribing therapies) aspects of contracts are monitored.

## 3.4 Out-of-pocket payments

As mentioned above, out-of-pocket payments accounted for 10.5% of current health expenditure in 2018, which was far below the EU average of 15.5%. OOP payments account for the majority of private health expenditure in Croatia (Table 3.1). They include payments for health services provided by

private providers not contracted by the CHIF and payments to providers contracted by the CHIF for services that are not fully covered or not covered at all by mandatory health insurance (from patients who do not have complementary voluntary health insurance).

### 3.4.1 *Cost-sharing (user charges)*

Co-payments have been in place since the 1990s. For most health services covered by the mandatory health insurance scheme, a uniform co-payment (co-insurance) of 20% applies. For certain goods and services the minimum contribution (as a percentage of the budgetary salary base) is specified.

For example, 3.01% of the budgetary base per day is payable for hospital care (i.e. HRK 100 per day; approximately €13), and 30.07% of the budgetary base for dental health care (mobile and fixed prosthodontics) for adults aged between 18 and 65 years. There is also a co-payment for all primary care services (HRK 10 per visit; approximately €1) and for prescription medicines (HRK 10 per prescription; approximately €1). Drugs on the basic list are reimbursed in full, while drugs on the complementary list (mostly branded drugs) require co-payments of between 10% and 35%. All drugs provided in hospitals are free of charge. Cost-sharing is capped at HRK 2000 (approximately €264) per episode. For people who have (complementary) voluntary health insurance, all co-payments, except those for drugs from the complementary list, are covered.

There are two kinds of user charges. User charges in primary care are the revenue of the CHIF, and user charges in secondary care are the revenue of health care providers at this level of care. User charges in primary care constitute co-insurance and amount to 0.3% of the base budget (€1.33). In secondary care user charges are co-payments and amount to 20% of the health service price paid by the CHIF. User charges are defined by the Mandatory Health Insurance Act. Indirect methods of cost-sharing include reference pricing for pharmaceuticals.

Overall, co-payments do not seem to have affected affordability of health services. Out-of-pocket spending on health as a share of final household consumption was 1.3% in 2018, which was the lowest share of all EU countries and well below the EU average of 3.3% (OECD/European Observatory on Health Systems and Policies, 2021).

**TABLE 3.4** User charges for health services

| HEALTH SERVICE | TYPE OF USER CHARGE IN PLACE * | EXEMPTIONS OR REDUCED RATES ** | CAP ON OOP SPENDING | OTHER PROTECTION MECHANISMS |
|---|---|---|---|---|
| Primary care | HRK 10 per visit; approximately €1 | Exemptions apply to vulnerable groups of the population | – | – |
| Outpatient specialist visit | – | – | – | – |
| Outpatient prescription drugs | HRK 10 per prescription; approximately €1 | Drugs on the basic list are reimbursed in full. Exemptions apply to vulnerable groups of the population | – | – |
| Inpatient stay | 3.01% of the budgetary base per day for hospital care (i.e. HRK 100 per day; approximately €13) | Exemptions apply to vulnerable groups of the population | Cost-sharing is capped at HRK 2000 (approximately €264) per episode | – |
| Dental care | 30.07% of the budgetary base for dental health care (mobile and fixed prosthodontics) for adults aged between 18 and 65 years (HRK 1000; approximately €135) | Children and those over 65 years | – | – |

*Source:* Authors' compilation.

** For those without voluntary health insurance.*

*** Some vulnerable groups are exempt from co-sharing, and some are exempt from paying voluntary health insurance and therefore indirectly exempt from co-sharing.*

### 3.4.2 *Direct payments*

No data are available on the extent of direct payments for goods and services that are not covered by the mandatory health insurance scheme or by the complementary insurance scheme of the CHIF.

### 3.4.3 *Informal payments*

Although informal payments are illegal and thus not captured in official data, there is some evidence of their existence in Croatia. There used to be a long-standing tradition of giving gifts when visiting physicians, but this has become less common as part of a cultural change over the last 15 years (Slot et al., 2017).

In the 2019 Eurobarometer survey 97% of respondents in Croatia noted that the problem of corruption is widespread (compared to 71% in the EU overall), 42% believed that the giving and taking of bribes and the abuse of power for personal gain are widespread in the health system (compared to 27% in the EU), and 7% of those who had been to a health care practitioner in the public sector in the previous 12 months indicated to have made an extra payment or a valuable gift to a nurse or a doctor or made a donation to the hospital (European Commission, 2019d).

## 3.5 Voluntary health insurance

### 3.5.1 *Market role and size*

Provision of voluntary health insurance is regulated by the 2006 Voluntary Health Insurance Act (see Section 2.7.1). There are two types of voluntary health insurance scheme in Croatia: complementary voluntary health insurance, covering user charges in the mandatory health insurance scheme (in Croatia called "supplementary insurance"); and supplementary voluntary health insurance, covering a higher standard of care (in Croatia called "additional insurance"). Substitutive voluntary health insurance for people not insured in the mandatory health insurance scheme (in Croatia called "private insurance") is available in theory, but not offered in practice.

Complementary health insurance may be provided by the CHIF or by private insurers. Additional and substitutive cover are provided by private insurance companies (the 2010 amendment of the Voluntary Health Insurance Act gave the CHIF the possibility of offering additional voluntary health insurance cover, but the CHIF has not yet entered this market).

Voluntary health insurance plays a small role in financing health care in Croatia, accounting for 3.8% of current health expenditure in 2018 (see Table 3.1).

### 3.5.2 *Market structure*

Voluntary health insurance plans are offered by six commercial insurers (complementary and supplementary plans) and the CHIF (complementary plans only). The CHIF dominates the voluntary health insurance market and covers approximately 76% of the population (see Section 3.3.1). An additional 16% of the population have their complementary health insurance covered from the state budget (CHIF, 2020a). It is not known how many people purchase voluntary health insurance from private health insurers.

Complementary voluntary health insurance plans cover all patient co-payments in the mandatory health insurance scheme. Supplementary voluntary health insurance plans provide services targeted at active people in good health. They cover preventive examinations; direct access to specialists, diagnostic imaging, laboratory tests and physiotherapy; and a better standard of hospital accommodation. Supplementary group plans are available to employees at the managerial level (e.g. for anti-stress programmes, or preventive cardiovascular examinations).

### 3.5.3 *Market conduct*

The key difference between complementary voluntary health insurance offered by the CHIF and by private providers is that the CHIF's premiums are community-rated, while premiums charged by private insurers are usually age-dependent. Most contracts for complementary voluntary health insurance (both with the CHIF and with private insurers) are signed for one year. Benefits are usually provided in cash, i.e. members have to pay for services upfront and are reimbursed after sending receipts to the insurer.

### 3.5.4 *Public policy*

The CHIF enjoys a privileged position in the voluntary health insurance market. It does not need to have a special company selling complementary policies; it does not come under the supervision of the Croatian Agency for the Supervision of Financial Services (HANFA) as other insurers do; and it does not have to follow other strict rules (i.e. regarding technical reserves, share capital, mandatory audit, solvency rules, etc.) applying to other insurers

(Bodiroga-Vukobrat, 2013). Furthermore, the 2002 prohibition of opting out from the mandatory health insurance scheme constrained the activity of private insurers when voluntary health insurance was introduced in 2003. Since 2011 complementary and supplementary health insurance premiums are no longer tax-deductible (tax deduction of premiums had been introduced in 2001).

Certain population groups have the right to have their complementary voluntary health insurance in the CHIF covered by the state (see Section 3.3.1). However, the 2010 Amendment of the Voluntary Health Insurance Act deprived many people of state coverage of complementary insurance. Between 2010 and 2018 the number of persons covered by complementary insurance with the premiums paid for by the state declined from 2.67 million to 743 387.

## 3.6 Other financing

Other key sources of health financing in Croatia are funds provided by the World Bank and the EU. Since 1993, when Croatia joined the World Bank, the Bank has provided it with financial support, technical assistance, policy advice and analytical services. The World Bank has been actively involved in health sector reforms and has provided assistance through its country-specific analytical studies and investment lending.

Croatia's preparations for EU accession opened up possibilities for receiving support from EU funds, including for projects in the health sector. Examples of projects funded by the EU are the European Patient Smart Open Services (epSOS) project for the implementation of Patient Summaries, the mHealth project (provision of medical services through the use of portable devices) and Instruments for Pre-Accession (IPA) funds for 2007–2011 (in the area of health and safety at work). After accession to the EU Croatia developed and implemented projects inside the EU financial framework 2014–2020 as an EU Member State.

The World Bank supported the Health System Quality and Efficiency Improvement programme (2014–2019) through a loan. The programme aimed to (a) improve the health care delivery system in order to provide more equitable quality and sustainable health services to the population; (b) rationalize the hospital network in order to streamline health care services to the population; (c) strengthen the Government's capacity to develop

and monitor effective health sector policies in the area of health financing, resource allocation and provider payments; and (d) promote effective public health interventions (World Bank, 2014a).

The amount of health financing provided by other sources of funding, such as philanthropic charitable organizations, is negligible. The activities of such organizations focus on supporting civil society (e.g. patient-centred NGOs) and on developing humanitarian programmes.

## 3.7 Payment mechanisms

### 3.7.1 *Paying for health services*

#### Public health services

Public health services provided by the county public health institutes (e.g. epidemiology) are financed from the CHIF's budget. Other public health services (e.g. services provided within public health programmes) are financed mainly from the state and county budgets and paid for depending on the activity or programme. Some services are charged directly to users (see Section 3.7.2).

#### Primary/ambulatory care

Most primary care doctors are self-employed and work in solo practices. Their services are contracted by the CHIF. Until 2008 primary care doctors were paid on the basis of capitation. Starting in 2008, GPs were remunerated through a combination of capitation (80% of their revenues) and activity-based payments (fee-for-service, amounting to 20% of revenues). The activity-based payments were introduced to increase the provision of preventive medicine and to incentivize the opening of family medicine centres on a 24/7 basis; however, the latter aim has so far not been fully achieved.

In April 2013 a new payment model was put in place. The goals were to incentivize health care providers to further increase the provision of certain types of care (e.g. preventive care) and to improve quality of care and patient satisfaction. In addition, GPs may receive bonus payments, depending on their performance and quality indicators. The payment consists of:

- A fixed part of the income (salary and operating costs, as well as age-based capitation payments for enrolled patients)
- A variable part of the income, depending on:
  - the number of diagnostic-therapeutic procedures (DTPs), both preventive and curative;
  - an incentive part for achieving key performance indicators (KPIs) or quality indicators (QIs)
  - additional possibilities to increase income by 5% (for preventive care, having a group practice, or being recognized as a "5-star practice")

The additional payment for achieving key performance or quality indicators amounts for each of them to 7.5% of the sum of the fixed part and the payment for diagnostic-therapeutic procedures. Key performance indicators include rates of prescriptions, sick leaves, executed referrals for primary care laboratory tests and executed referrals for secondary care consultations. Quality indicators are achieved by monitoring and treating chronic patients through "chronic patient panels". Panels are available for health conditions such as hypertension, COPD and diabetes, and include lifestyle parameters and clinical outcomes.

The "5-star practice" model is meant to incentivize primary care physicians to provide additional services for insured persons, such as phone consultations, e-scheduling of appointments, e-ordering and other e-health services (Bodiroga-Vukobrat, 2013).

## Specialized ambulatory/inpatient care

Hospitals that belong to the National Health Care Network (i.e. that are contracted by the CHIF) are largely paid according to global budgets, with 90% of revenues fixed and 10% depending on provided services (invoices by cases based on a DRG system). Since 2020, 100% of hospital income is paid in advance (up from 90% in 2019) and the hospitals then provide invoices based on episodes of care. Additional payments are made for services for which there are long waiting lists (e.g. MRI or CT scans) and for special funds, such as for interventional cardiology. Hospitals outside the Health Care Network set their own fee schedules.

The case-adjusted payment element is based on DRGs. Croatia uses a modified version of the Australian Refined-DRG system (version 5.1), known in Croatia under the abbreviation DTS (in Croatian: *Dijagnostičko terapijske skupine*). Parameters related to the DTS payment system (such as length of stay or cost per DRG) are published regularly on the CHIF's website for all hospitals, enabling benchmarking. The main goals behind introducing the DTS payment system were cost reduction and rationalization of resources, as well as improvement of certain performance indicators, such as shortening average length of stay (ALOS) per hospitalization, achieving a higher patient turnover and reducing waiting times for certain procedures.

In 2015 a new price list was introduced for outpatient services (in which the price consists of labour, medicines and consumables) and named "diagnostic-therapeutic procedures" (DTPs, in Croatian *Dijagnosticko-terapijski postupci*). In addition, higher prices were offered for same-day surgery procedures (DTPs) in comparison with DRG prices (paid for inpatient care), leading to a sizeable increase in same-day surgeries. Same-day surgeries for cataracts increased from less than 20% in 2012 to 64.8% in 2016, those for inguinal hernia increased from 0% to 18.1% and those for tonsillectomy increased from 0% to 49.1% (OECD/European Observatory on Health Systems and Policies, 2021).

Hospital arrears are still a major issue in the health system (Vončina et al., in press). According to the 2019 European Semester report of the European Commission (European Commission, 2019b), hospital arrears were still being accrued due to the inadequate financing of hospitals and no specific plans had been disclosed to address this issue.

According to a 2019 World Bank report (World Bank, 2019c), health system liabilities almost entirely come from the hospital sector and, despite repeated investments to reconcile liabilities with available funds, are barely sufficient to clear one-year's worth of overdue arrears. Poor expenditure control is also explained by disconnects in health system governance. The report notes that specific measures, including payment mechanisms, can improve efficiencies and contain costs, but their effect will be limited if they are not part of a holistic multi-pronged health systems approach.

In September 2018 the government adopted the national development plan for university hospital centres, university hospitals, clinics and general hospitals for 2018–2020 (Ministry of Health, 2018b), which recognized the need to improve health care provision and efficiency, but results were not yet visible at the time of writing (April 2021).

### Pharmaceutical care

Pharmaceuticals prescribed at the primary care level are either partly or fully reimbursed by the CHIF, depending on whether they are included in the basic or the complementary list (see Section 3.3). The cost of pharmaceuticals administered in hospitals is included in the DTS payments or, in certain cases, covered from separate CHIF funds for very expensive medicines.

## 3.7.2 *Paying health workers*

### Public health workers

Personnel working in county public health institutes are paid a salary.

### Primary/ambulatory care workers

As mentioned above, most primary care physicians are self-employed. They are paid by the CHIF based on capitation and activities, as well as performance and quality indicators (see Section 3.7.1). A physician and a nurse are contracted and paid by the CHIF as a team, but nurses in solo practices are paid a fixed salary by the physicians owning the practice. Physicians and nurses employed in publicly owned health centres are paid a fixed salary, while bonuses for the variable part are paid to the health centre.

### Specialized ambulatory/inpatient care workers

Doctors and other health workers working in public hospitals (university hospitals and clinical centres and county hospitals) are paid a salary, according to the collective agreement for health care and health insurance between the Government and the trade unions.

### Pharmacists

Pharmacists employed in pharmacies receive a salary. Owners of private pharmacies earn incomes related to profits.

**TABLE 3.5** Provider payment mechanisms

| PAYERS/PROVIDERS | CENTRAL GOVERNMENT | COUNTIES | SOCIAL HEALTH INSURANCE | EMPLOYERS | COMPLEMENTARY VOLUNTARY HEALTH INSURANCE PLANS | COST- SHARING |
|---|---|---|---|---|---|---|
| Public health | Budget funds for programmes/projects and capital investments | Budget funds for programmes/projects and capital investments | Capitation | – | – | – |
| Health centres | – | Budget funds for programmes/projects and capital investments | Capitation, fee-for-service, pay for performance | – | Cover all patient co-payments in the mandatory health insurance scheme | User charges in primary care are the revenue of the CHIF, and user charges in secondary care are the revenue of health care providers at this level of care |
| Outpatient specialists | – | – | Fee-for-service | – | | |
| Acute hospitals | Budget funds for capital investments | Budget funds for capital investments | Global budgets, DRGs | – | | |
| Occupational services | – | – | Fee-for-service | – | – | |

| PAYERS/PROVIDERS | CENTRAL GOVERNMENT | COUNTIES | SOCIAL HEALTH INSURANCE | EMPLOYERS | COMPLEMENTARY VOLUNTARY HEALTH INSURANCE PLANS | COST- SHARING |
|---|---|---|---|---|---|---|
| Rehabilitation | – | – | Fee-for-service | – | Cover all co-payments in the mandatory health insurance scheme | User charges in primary care are the revenue of the CHIF, and user charges in secondary care are the revenue of health care providers at this level of care |
| Dentists | – | – | Capitation, fee-for-service, pay for performance | – | – | |
| Pharmaceuticals | – | – | Fee-for-service | – | – | |
| Long-term care | – | – | Per diem | – | – | – |
| Travel/ ambulance | Budget funds for programmes/projects and capital investments | Budget funds for programmes/projects and capital investments | Fee-for-service | – | – | – |

*Notes:* DRG = diagnosis-related group. Ambulance services are paid according to "standard teams" and fuel costs.

# 4

# Physical and human resources

## Summary


- Croatia has a well-developed infrastructure of health facilities, but faces challenges in rural areas and the country's islands.
- More people in Croatia (0.7% in 2019, compared to an EU average of 0.1%) reported unmet medical needs due to distance than in any other EU Member State, indicating challenges in the geographical distribution of health facilities.
- The number of practising physicians per 100 000 inhabitants (344 in 2018) in Croatia was below the EU average (382), but had increased steadily from 237 in 2000.
- The geographical distribution of human resources is uneven, with shortages of primary care practitioners in rural areas and the country's islands.
- Development of an e-health information system is under way and a Central Health Information System has been set up.

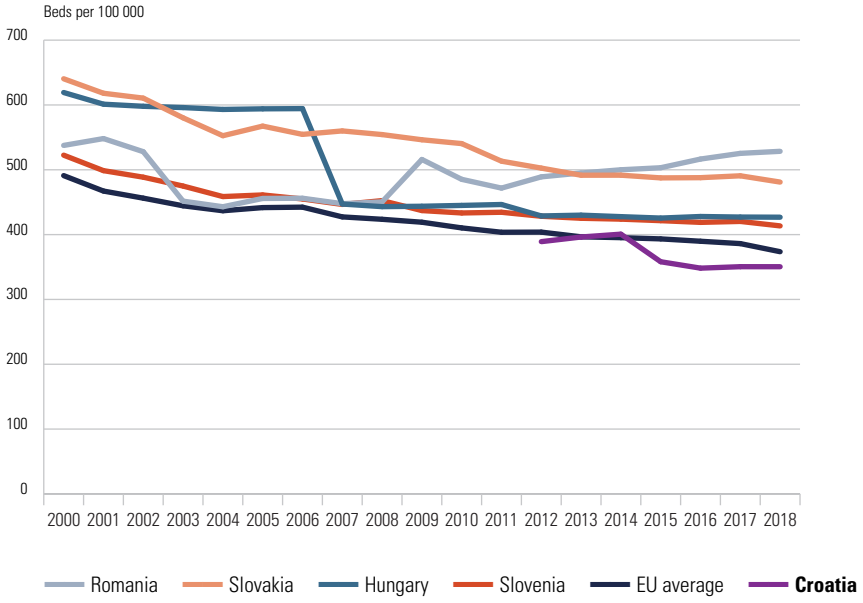
# 4.1 Physical resources

## 4.1.1 *Infrastructure, capital stock and investments*

### 4.1.1.1 INFRASTRUCTURE

Despite its low levels of health expenditure per capita, physical resources in Croatia's health system are on a par with many other European countries. The number of hospital beds declined from 6.0 per 1000 population in 2000 to 5.6 in 2018, which was above the EU average of 5.4 in 2018. However, a large share of hospital beds in Croatia are long-term care beds and the number of curative hospital beds per population is lower than in comparator countries (Figure 4.1).

**FIG. 4.1** Curative care beds in hospitals per 100 000 population in Croatia and selected countries, 2000–2018




*Source:* Eurostat, 2021.

**BOX 4.1** Are health facilities appropriately distributed?

Most hospitals are located in central Croatia, mainly in Zagreb county and the city of Zagreb. The network of hospitals has not been substantially modified in recent decades to match migration patterns, the changing demographic structure of the population or advancements in medicine that enable care provision on an outpatient or day care basis rather than in inpatient facilities. The geographical distribution of health care infrastructure and human resources for health varies considerably. Central Croatia (mainly Zagreb county and the city of Zagreb) has the largest number of facilities and health workers, while there are fewer facilities and health personnel in more remote areas, such as the islands off the Adriatic coast and rural areas in central and eastern Croatia. More people in Croatia (0.7%) report unmet medical needs due to distance than in any other EU Member State, with an EU average of 0.1% in 2019. At the same time, there are a number of hospitals in close proximity to each other offering the same types of services.

#### 4.1.1.2 CURRENT CAPITAL STOCK

In 2019 there were 81 hospital institutions and centres in Croatia: 5 university hospital centres (2 in Zagreb, and 1 each in Rijeka, Split and Osijek); 3 university hospitals; 5 clinics (for infectious diseases, children, orthopaedics, psychiatry and cardiovascular diseases); 22 general hospitals; and 34 special hospitals, treatment centres and hospices. In addition, there were 49 health centres and 9 general infirmaries (inpatient facilities run by health centres in isolated areas). Most institutions were either owned by the state or by the counties; only 11 hospitals and 5 sanatoria were privately owned (CIPH, 2020a).

#### 4.1.1.3 REGULATION OF CAPITAL INVESTMENT

The Ministry of Health is the main regulatory body for the health system. It regulates standards of health services, the training of health care professionals and capital investments in publicly owned health care providers. The amendments to the 1993 Health Care Act that came into power on 1 July 2001 decentralized the financing of medical institutions. Responsibility for the financing of general and special hospitals and primary

health care centres was transferred to the counties and the city of Zagreb. Amendments to the Law on Financing Units of Local Government and Regional Self-Government set out the sources of funds for decentralized capital investment in the health sector and how they should be allocated. Decisions on "minimal financial standards for decentralized functions for medical institutions" issued by the Ministry of Health in 2001–2003 enabled the use of decentralized funds for the maintenance of working premises; medical and nonmedical equipment and means of transportation in medical institutions; and new investments.

#### 4.1.1.4 INVESTMENT FUNDING

Since 2001 public investments in the health sector have been funded mainly from the Ministry of Health. The state allocates tax revenues for the institutions owned by the Ministry of Health, as well as for the counties (the so-called "decentralized funds"). Allocations depend on the size of the counties' populations, and the number of facilities and beds; these criteria are set out in the Decision on Minimal Financial Standards for Decentralized Functions of Health Institutions. The counties then decide on how to divide the funds among the medical institutions in their geographical areas. However, they have to take into account the criteria set out in the Ministry's Decision and the Ministry has to approve the allocation. In addition, counties can use funds from their own budgets for further capital investments in county-owned hospitals. If they are unable to raise sufficient resources from their tax revenues, the central Government may cover shortfalls in funding. The CHIF may also allocate some funds for investments in infrastructure and technical equipment, but these amounts are marginal. Public-private partnerships in health care are still quite rare in Croatia.

### 4.1.2 *Medical equipment*

The Government has placed emphasis on strengthening primary care. Recent amendments to the Health Care Act give the counties the possibility to purchase certain types of equipment for the health centres within their territories, in part for the further development of e-health services.

The number of magnetic resonance imaging (MRI) units and computed tomography (CT) scanners in hospitals and providers of ambulatory health care per 100 000 inhabitants in Croatia is only slightly below the EU average.

In terms of examinations by medical imaging techniques (CT, MRI and PET), Croatia recorded 11 242 such examinations per 100 000 population in 2019, which was more than in Romania (3474) and Slovenia (8396), but less than in Slovakia (16 015) and Hungary (18 551) (Eurostat, 2021). It remains unclear whether these numbers indicate under- or overconsumption.

**TABLE 4.1** Items of functioning diagnostic imaging technologies (MRI units, CT scanners) in Croatia and the EU per 100 000 population

| | CROATIA (2018) | EU AVERAGE (2016) |
|---|---|---|
| MRI units | 1.3 | 1.4 |
| CT scanners | 2.0 | 2.2 |

*Source:* Eurostat, 2021.

### 4.1.3 *Information technology and e-health*

Development of an e-health information system has been under way since the early 2000s with the goals of achieving interoperability between the IT systems of health care providers, the CHIF and public health bodies, and the provision of real-time data on each patient and provider. The implementation started with the introduction of the Central Health Information System operated by the CHIF. This is an integrated information system designed to connect all peripheral information systems in primary care practices, pharmacies and biochemical laboratories, as well as the information systems in hospitals used for centralized scheduling of specialist consultations and diagnostic tests. Access to the system is only granted to authorized users, i.e. health care providers contracted by the CHIF to provide services within the scope of mandatory health insurance.

Although the integration of IT systems in primary care has been almost completed, hospitals still have independent IT systems that are not yet fully integrated into the national hospital information system. Other priorities for the future include the development and implementation of electronic medical records and operationalizing the centralized scheduling of specialist consultations and diagnostics. However, there is no clear timeline for the implementation of these tools. Since September 2019 a central management system has been introduced (see Section 6.1), but at the time of writing (April 2021) no information on its effects was available.

## 4.2 Human resources

The geographical distribution of human resources is uneven, with an oversupply in urban areas and a shortage in rural areas and the country's islands off the Adriatic coast. In May 2015 the Government adopted the Strategic Plan for Human Resources in Healthcare for 2015–2020, which aims to establish a human resources management system. During the COVID-19 pandemic Croatia took a number of measures to increase the number of staff where needed and ensure the retention of existing health workers. Measures to increase the number of staff included the redeployment of doctors and nurses to COVID-19 duties, as well as the inclusion of young doctors. Measures to support the health workforce included benefits in the form of funding or the provision of accommodation for doctors working with COVID-19 patients (OECD/European Observatory on Health Systems and Policies, 2021).

### 4.2.1 *Planning and registration of human resources*

All medical professionals in Croatia have to be registered, licensed and relicensed by their respective professional chamber. Eight categories of professionals are regulated by medical chambers in Croatia: medical doctors; dentists; pharmacists; nurses; midwives; medical biochemists; physical therapists; and other health care professionals (sanitary monitoring staff, radiology technicians, occupational therapists and medical laboratory

workers). The chambers regulate registration, licensing and continuous medical education (CME), controlling whether CME requirements are being met and imposing sanctions, including conducting disciplinary proceedings, if not. They also promote professional ethics.

All health workers and associates are also registered in the Croatian Health Workforce Registry, established in 1991 at the CIPH. Every health care provider (including those in the private sector) is obliged to submit information on all the health workers it employs, including their name, age, profession, entry or departure from service, and any change of position or professional level.

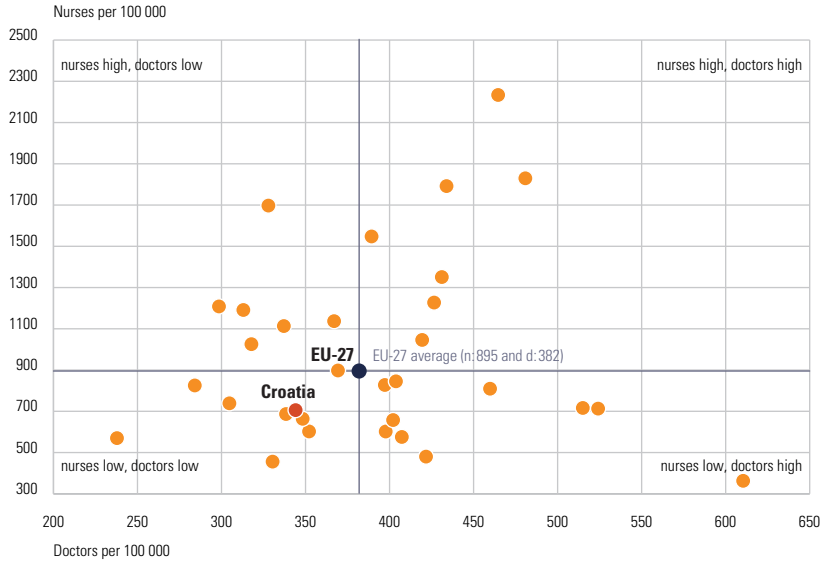
### 4.2.2 *Trends in the health workforce*

By the end of 2017 there was a total of 69 841 health workers, with either permanent or temporary contracts, in both the public and private sector. In addition, there were 5269 administrative and 11 125 technical staff. Most (48.1%) employed health workers had high school education, 33.9% had a postgraduate university degree, 17.4% had an undergraduate university degree (undergraduate studies), and 0.6% had a lower level of education (below high school).

#### Physicians

In 2018 Croatia had 344 practising physicians per 100 000 inhabitants. This number was below the EU average (382), but had increased steadily from 237 in 2000 and exceeded the ratios in comparator countries (Figures 4.2, 4.3). The number of GPs per 100 000 inhabitants (57 in 2019) was below the EU average (78 in 2013) and physicians are lacking especially in primary care. Shortages are also observed in rural areas and on the country's islands.

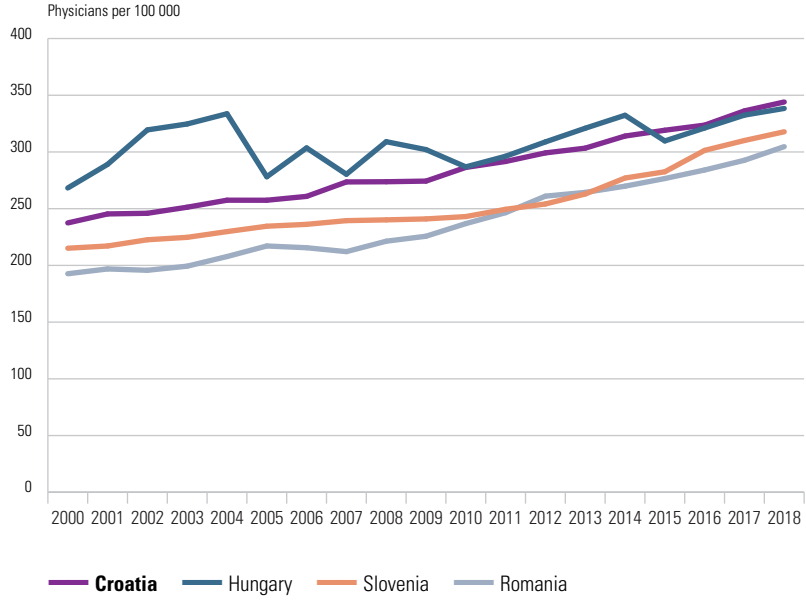
**FIG. 4.2** Practising nurses and physicians per 100 000 population, 2018 or latest year




*Source:* Eurostat, 2021.

*Note:* The category of nurses includes midwives.

**FIG. 4.3** Number of practising physicians per 100 000 population in Croatia and selected countries, 2000–2018

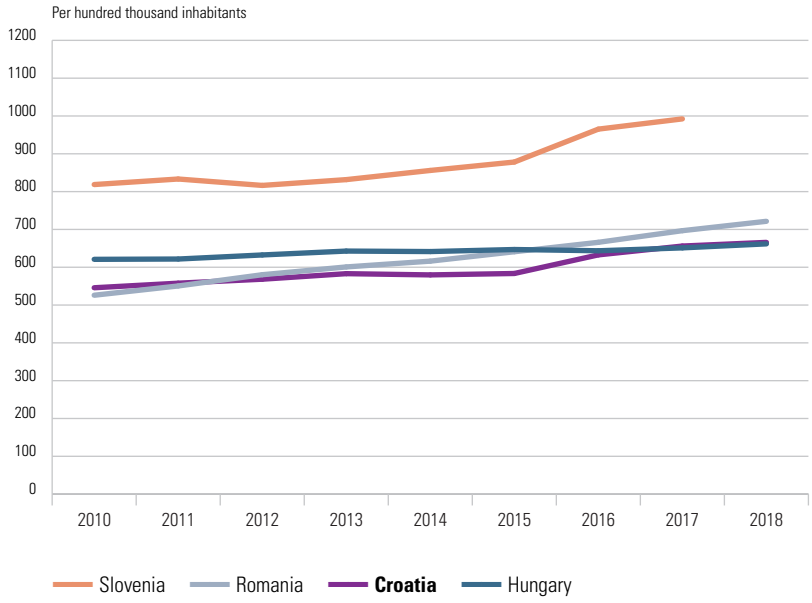



*Source:* Eurostat, 2021.

## Nurses and midwives

In 2018 there were fewer practising nurses (excluding midwives) in Croatia per 100 000 population (667) than in two of the comparator countries (Slovenia and Romania), but the number of nurses per population has increased in recent years (Figure 4.4). Nurses are the largest professional group in Croatia, accounting for 44.1% of all employees in the health sector, with 11.9% of them being male. Most nurses (23 872) had secondary education, 6656 had a Bachelor's degree and 245 had a postgraduate degree. In addition, there were 1766 midwives in 2017.

**FIG. 4.4** Number of practising nurses per 100 000 population in Croatia and selected countries, 2000–2018




*Source:* Eurostat, 2021.

*Note:* The number of nurses excludes midwives.

## Dentists

There were 3714 doctors of dental medicine in 2017, with 66.1% of them being women and 12.7% specialists. The number of practising dentists in Croatia has risen in recent years, from 68 per 100 000 population in 2000 to 85 in 2018 (Eurostat, 2021).

## Pharmacists

By the end of 2017 there were 2874 pharmacists and 474 medical biochemists. The number of practising pharmacists in Croatia was 76 per 100 000 population in 2018, which was roughly in line with its comparator countries (80 in Hungary, 71 in Slovenia and 90 in Romania).

**BOX 4.2** Are health workers appropriately distributed?

The uneven geographic distribution of health workers and the difficulties in recruiting and retaining them in certain regions is an important policy issue in Croatia. The density of health workers is consistently greater in urban regions, reflecting the concentration of specialized services. The main concern is shortages of primary care practitioners in rural areas and on the islands. Furthermore, hospitals are struggling to provide a functioning service, resulting in many overtime shifts and the employment of retired staff. The main reasons why health workers leave rural areas are family commitments (associated with the poor employment and education opportunities there and a lack of free time) and lack of professional support in rural areas.

### 4.2.3 *Professional mobility of health workers*

There is no systematic surveillance or reporting of migration trends in the health sector. Although Croatian policies on professional mobility have been harmonized since entering the EU, there is no national strategy to deal with the migration of health workers. There are also no systematic measures for retaining the health workforce in the country or particular regions. Some of the regions have started addressing this problem themselves, offering mostly financial benefits, such as student scholarships or subsidized mortgages.

In 2015 the key destination countries of Croatian migrants were Germany, Austria, Italy and Slovenia, but there are no specific data for health workers. The number of requests to the Croatian Medical Chamber for a certificate that allows a person to work abroad increased notably in the first year after Croatia's accession to the EU (from 271 in 2013 to 601 in 2014), but declined afterwards (to 387 in 2015) (Župarić-Iljić, 2016). According to a survey conducted by the Croatian Medical Chamber in 2016, covering 1531 physicians aged 29–35, 58% of respondents indicated that they would leave Croatia if offered an employment opportunity abroad. The main reasons for their willingness to leave the country included better working conditions (74%), well-regulated health systems (64%) and higher wages (64%) (Babacanli et al., 2016).

### 4.2.4 *Training of health personnel*

Five types of medical professionals (medical doctors, nurses, dentists, pharmacists and midwives) fall within the system of coordination of minimum training conditions according to Directive 2005/36/EC on the recognition of professional qualifications. Croatia meets these minimum training conditions for all five categories of medical professionals.

#### Medical doctors

Four universities (in Zagreb, Osijek, Rijeka and Split) offer medical education in Croatia. It takes six years to complete the medical degree for doctors. After joining the EU, the Ministry of Health adopted the EU directive according to which medical students enrolled after 1 July 2013 will not have to take an internship and state exam after completing their studies. Instead, graduated medical doctors will receive a work licence immediately upon graduation and move on to specialization or work as a substitute for a general practitioner or in an outpatient emergency medical service. The licence will be granted by the Croatian Medical Chamber upon application. In the transitional period between graduation and specialization the Government introduced an optional form of internship called "work of medical doctors under supervision", which should last between six months and up to two years.

Specialization programmes are offered in 46 medical areas. The National Commission for the Specialist Training of Physicians is responsible for defining the generic and specific competencies, and for evaluating, assessing and improving the quality of specialist training. The Ministry of Health grants accreditations and supervises specialization programmes. The duration and content of each specialization programme must meet the minimum requirements set out by EU Directive 2005/36/EC.

Mandatory relicensing of all medical doctors was introduced in 1996. In order to be relicensed, a medical doctor must collect 120 credit points (through CME, publications, etc.) over a period of six years and apply for a renewal of their licence to the Chamber.

## Nurses

Nurses complete either a course at a vocational high school for nurses (five years), a Bachelor's degree in nursing at a university (three years) or an additional Master's degree (two years). After graduation, they are eligible to apply for a licence with the Croatian Chamber of Nurses and are subsequently entered into the professional register.

Nurses can attend postgraduate specialist programmes in either public health or management. Specializations are also available in psychiatry, paediatrics, internal medicine, haematological and oncological care, intensive care, anaesthesia and resuscitation, dialysis, surgery and emergency medicine.

Nurses are required to participate in continuing education and to collect 90 points during a six-year period (with a minimum of 15 points per year). If they do not meet this requirement, they must take a re-assessment examination at the Croatian Nursing Council.

## Dentists

Dentists complete a six-year university programme in dental medicine, after which they may apply for a licence with the Croatian Dental Chamber and can be subsequently entered into the register of doctors of dental medicine. Dentists may then choose out of eight specializations. Dentists are required to participate in continuing education (a minimum of 10 points per year, 60 points in total) in order to have their licence renewed. The licence is issued for a period of six years.

In 2009 the Croatian Dental Chamber recognized two categories of auxiliary dental staff: dental technicians (working independently) and dental assistants (working under the direction and supervision of a doctor of dental medicine). Dental technicians and dental assistants complete a degree in vocational schools (four years) followed by a mandatory internship and state examination. After that they are registered by the Chamber (registration gives them the right to practise).

### Pharmacists

Pharmacists complete a university degree in pharmacy (five years), after which they are eligible to apply for a licence with the Croatian Chamber of Pharmacists and will subsequently be entered into the register of pharmacists. The licence has to be renewed every six years and to achieve this pharmacists need to collect a minimum of five continuous professional education points per year.

### Midwives

Midwives complete a Bachelor's degree (three years) or Master's degree (additional two years). They register with the Croatian Chamber of Midwives for the purpose of performing health care activities.

## 4.2.5 *Physicians' career paths*

According to the 2018 Health Care Act, after graduation doctors can choose to pursue a career in three different directions: academic, scientific or clinical. A doctor choosing an academic career will begin as a teaching assistant. After completing a PhD and fulfilling all the conditions required by academic institutions, they acquire the title of assistant professor. Afterwards, it is possible to advance to associate professor and eventually to full professor. A doctor choosing a scientific career may work as a research associate or scientific adviser. A doctor choosing a clinical career first undergoes specialist training. After completing the training, they can be promoted to the position of chief of department or chief of staff and ultimately to that

of hospital director. These decisions are taken internally at the institutional level. It is not unusual for doctors to pursue different career paths in parallel.

### 4.2.6 *Other health workers' career paths*

Nurses can advance professionally in hospitals to become head of department nurses and, eventually, head of hospital nurses. According to the 2018 Health Care Act, nurses are members of the governing bodies in hospitals and participate in decision-making. They can also opt for an academic career, starting with doctoral studies.

# 5

# Provision of services

## Summary

- The provision of public health services is organized through a network of public health institutes, with one national institute and 21 county institutes.
- Primary care services are provided in solo practices, larger units comprising several offices, and county health centres. Primary care physicians (family physicians, paediatricians and gynaecologists) are usually patients' first point of contact with the health system.
- Specialized outpatient care is mostly delivered in hospital outpatient departments. Inpatient secondary care facilities include general hospitals and specialized hospitals.
- Pharmacies are mainly located in cities and towns, while the pharmacy network in rural and underdeveloped areas remains poorly developed.
- Croatia's long-term care system is underdeveloped, with little or no coordination between the social welfare, health and war veterans' systems; between national, county and municipal/city levels; or between public and private (not-for-profit and for-profit) providers.
- The establishment of palliative care has been one of the priorities of the National Health Care Strategy 2012–2020.

- Mental health services are mainly provided in institutions. Community mental health care, except for certain programmes such as prevention of addiction, remains underdeveloped.

## 5.1 Public health

The provision of public health services is organized through a network of public health institutes: one national institute (the Croatian Institute of Public Health, CIPH, https://www.hzjz.hr), owned by the state and managed by the Ministry of Health, and 21 county institutes, owned by the counties. The activities of the county institutes are coordinated and supervised by the CIPH. The CIPH is responsible for the collection, analysis and publication of public health statistics (e.g. information on disease incidence or mortality) and epidemiological data, and for health promotion and health education at the national level. It also maintains health registers and is responsible for the coordination and organization of national screening programmes. CIPH's Department of Epidemiology is responsible for disease control and prevention. It maintains the central information system for reporting and monitoring the incidence of infectious diseases, and proposes and supervises the implementation of key preventive and anti-epidemic measures by various actors in the health system, from family doctors to hospitals, and including specially trained and equipped epidemiology service units within the county institutes of public health. The Department also supervises mandatory immunizations and pest control; monitors environmental pollution and waste management; sets standards; and tests food and drinking water safety. The county public health institutes provide services (for their respective populations) in the following areas: epidemiology and quarantine of communicable diseases; epidemiology of non-communicable diseases; water, food and air safety services; immunizations (including overseeing the mandatory immunization programmes); mental health care (prevention and out-of-hospital treatment of addictions); sanitation; health statistics; health promotion; and school and adolescent medicine.

Mandatory programmes are carried out by primary care doctors (family physicians and primary care paediatricians) and the school and adolescent medical service for school-aged children. Non-mandatory vaccination programmes are delivered through family physicians and county institutes

of public health. Some of the non-mandatory vaccinations recommended by the CIPH are free of charge for at-risk populations (e.g. influenza vaccine for older people and patients with chronic diseases or HPV vaccine for 8th graders). The Mandatory Vaccination Programme (also called the Childhood Vaccination Programme) covers vaccines against tuberculosis; hepatitis B; diphtheria, tetanus, pertussis, polio and Hib disease; pneumococcus; and measles, mumps and rubella. The Programme and other public health activities, such as the surveillance and early response system, have been successful in keeping infectious diseases under control. Diseases preventable through vaccination have either been eradicated (diphtheria, poliomyelitis) or their incidence has been drastically reduced. However, in recent years anti-vaccination groups have emerged, resulting in a decrease in childhood vaccination rates, especially against measles. Vaccinations against COVID-19 started in January 2021.

The National Programme for the Early Detection of Breast Cancer, established in 2006, was the first national programme for the early detection of cancer in Croatia. The programme encompasses a mammography examination every two years for all women aged 50–69. In addition, women aged 20–40 are recommended to undergo a clinical breast examination every three years, and women over 40 are recommended to undergo one annually. The National Programme for the Early Detection of Colorectal Cancer started in 2007 and includes an occult blood test for all persons over the age of 50 and colonoscopy for positive occult blood tests. The Early Cervical Cancer Detection Programme was launched in December 2012 and should have included a Pap smear every three years for women aged 25–64, but was stopped shortly after its launch due to organizational flaws. However, there is a long tradition of opportunistic Pap smear testing in primary care gynaecology practices which is used by a significant number of women. A national programme for early detection of children amblyopia has been in place since 2018. Screening for lung cancer was introduced at the beginning of 2020. Family physicians are to select persons aged 50–75 years, current smokers or those who quit smoking within the last 15 years, for a low-dose CT scan. The first step in the screening process is the opportunistic identification of persons who meet the screening criteria, conducted by a family physician. In this step, family physicians, based on information collected from the patient, decide which patients meet the criteria to be included in the target group for the national screening programme (Ministry of Health, 2020a).

In December 2020 the National Strategic Framework against Cancer for 2020–2030 was adopted. The strategic goal of the national strategic framework is to improve the health of citizens throughout their lifecourse, by reducing the incidence and mortality of cancer and prolonging and increasing the quality of life of patients with cancer in Croatia to the level of western European countries. Based on this framework, specific objectives and activities will be defined in the forthcoming National Health Development Plan 2021–2027.

The online public debate on the Action Plan for Prevention and Control of Chronic Non-Communicable Diseases for 2020–2026 closed in February 2020. The general aim of the Action Plan is to reduce the burden of chronic non-communicable diseases by undertaking integrated actions towards common risk factors and their basic determinants through cross-sectoral cooperation, and strengthening the health system for the prevention and control of chronic non-communicable diseases. Specific objectives and activities will be defined in the forthcoming National Health Development Plan 2021–2027.

In 2020 a new draft National Strategy to Combat Addiction for 2021–2030 and a draft Action Plan were drawn up, defining national objectives and priorities, as well as key activities, principal actors and deadlines. The strategy covers all types of addiction and aims to reduce the use of legal and illegal psychoactive substances and the development of behavioural addictions. It is anticipated to be adopted by late 2021.

The department for combating drug abuse is part of the Croatian Institute of Public Health. It is responsible for the monitoring of the prevalence of addictions and the planning and evaluation of preventive measures. The National Register of Treated Psychoactive Drug Addicts was established in 1978 and is maintained by the National Centre for Addiction Prevention. Since 2003 county centres for addiction prevention have formed part of the county institutes of public health. In 2010 the National Strategy against Disorders caused by Excessive Consumption of Alcohol for 2011–2016 was passed. It envisaged measures for the prevention of alcohol abuse, for the treatment and rehabilitation of persons with alcohol-related problems, and for encouraging and supporting communities in their efforts to reduce harmful alcohol consumption. The Act on the Use of Tobacco Products was passed in 2008. It introduced a complete smoking ban in public places, with the intention of protecting non-smokers from tobacco smoke and changing the habits of smokers. The financial crisis that started in 2008 prompted a

revision of this law in 2009 and, according to the new regulations, smoking was again allowed in bars under certain conditions. In 2018 the EU's Tobacco Products Directive was adopted.

The Croatian Adult Health Survey was initiated in 2001 as part of a project for the prevention of cardiovascular diseases. It was implemented jointly by the Croatian Ministry of Health, Statistics Canada, the Central Bureau of Statistics of Croatia and the Andrija Štampar School of Public Health (Vuletić et al., 2009). The survey was carried out in 2003. The aim was to provide comprehensive health data on the Croatian population, including health status, use of health services and health determinants (nutrition, smoking, alcohol consumption, physical activity and body mass index (BMI) calculated from self-reported height and weight data). The Croatian Adult Health Cohort Study was carried out in 2008 as a follow-up study and involved re-interviewing the respondents surveyed in 2003; another follow-up survey was planned for 2013 but was not carried out owing to the lack of financial resources (Uhernik et al., 2012). However, the standardized European Health Interview Survey (EHIS) was carried out in 2014/15 and 2019. It provided comprehensive health data for the Croatian adult population (including health status, use of health services and health determinants) which are comparable with data for other EU Member States.

The Health Behaviour in School-aged Children (HBSC) survey has been conducted every four years in Croatia since 2002. It is a nationally representative survey that provides insights into young people's well-being and health behaviours and their social context. The focus is on school children aged 11, 13 and 15 years to explore and gain an understanding of their health behaviours in their day-to-day lives.

The Global Youth Tobacco Survey (GYTS) is a school-based survey designed to enhance the capacity of countries to monitor tobacco use among youth and to guide the implementation and evaluation of tobacco prevention and control programmes. The survey has been implemented in Croatia since 2003.

In 2015 the national programme "Healthy Living" was established with the aim of informing and educating people of all ages about the positive aspects of healthy lifestyles, including proper nutrition, physical activity, obesity prevention, reduction of overweight and reduction of chronic non-communicable diseases.

Occupational health services are provided through occupational medicine specialists, mainly working in private primary care practices or

county health centres. The Croatian Institute for Health Protection and Safety at Work was subsumed under the Croatian Institute of Public Health in 2019, and no longer exists as an independent entity. Its role was to monitor the situation in the field of health and safety at work and to improve health protection and safety at work by designing and implementing preventive activities.

There is in general a well-developed network of public health institutions and professionals across the country. However, access to public health services is more difficult in rural and underdeveloped areas and on the islands. The relative shortage of health professionals in such areas, the poorer socioeconomic status of the population and transport problems are the main causes of inequities of access. Some groups of the population are offered additional services; for example, free vaccinations are offered to high-risk groups and the National Programme for Roma aims to improve health services for the Roma population.

In general, there are public health interventions at national and county levels. Each county public health intervention has its own specifics, as county priorities are set depending on the needs of the population and the particular local environment. Each county publishes a three-year health plan, a strategic document that defines county public health priorities based on consultations involving professionals, politicians and citizens.

Croatia reacted swiftly to the first wave of the COVID-19 pandemic, adopting a range of mitigation measures to prevent and contain the transmission of the virus. These measures included the closure of educational institutions, the imposition of quarantine on certain areas, restrictions of international travel, restrictions of movement at the local level, and self-isolation measures. A first full lockdown was imposed on 23 March 2020. Restrictions were gradually lifted in stages in April and May 2020. In contrast, the response to the second wave of COVID-19 (from September 2020 on) was hesitant and characterized by a reluctance to reimpose the measures taken in the first wave, although some mitigation measures were imposed, such as the closure of bars and restaurants in November 2020.

**BOX 5.1** Are public health interventions making a difference?

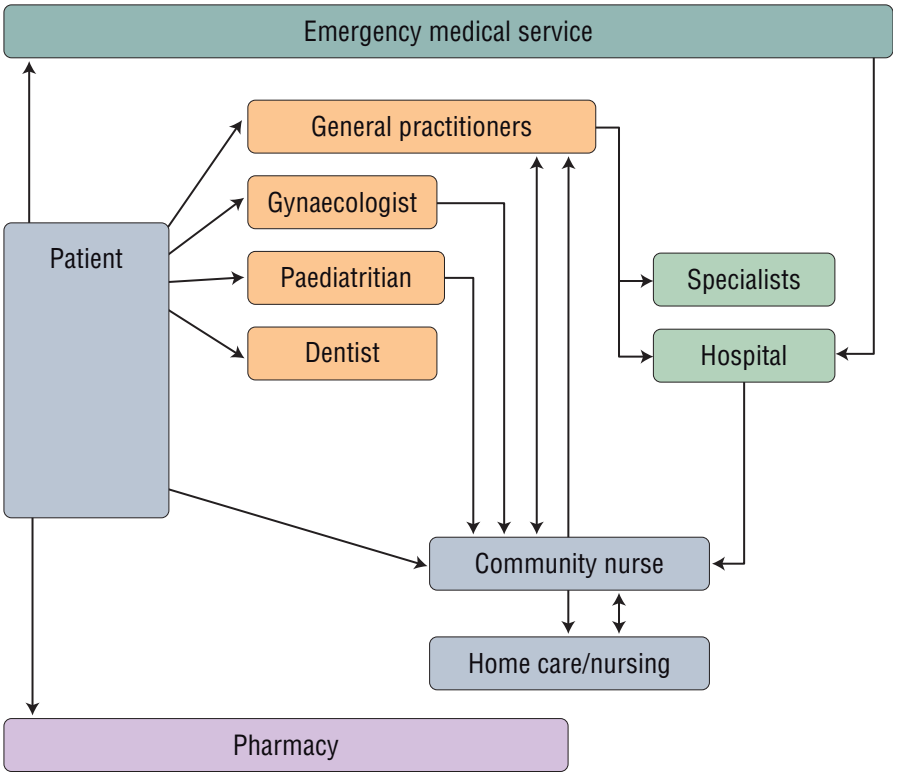
Approximately 44% of all deaths in Croatia can be attributed to behavioural risk factors, including dietary factors, tobacco smoking, alcohol consumption and low physical activity (OECD/European Observatory on Health Systems and Policies, 2021). Intersectoral policies to address key determinants of ill-health, such as smoking and poor nutrition, are underdeveloped. Anti-smoking policies are weak, with a lack of smoke-free places and underdeveloped media campaigns against tobacco use. The prevalence of obesity is high and growing. A Centre for Healthy Eating and Physical Activity was opened in 2014 and a National Plan for the Reduction of Salt Intake for the period 2015–2019 was adopted in 2014, but there is much more scope for stepping up preventive programmes. Deaths from alcohol-related causes and transport accidents exceed the EU average. Alcohol control policies have been adopted, including a minimum age of 18 years for sales on or off the premises, but there is scope for implementing further restrictions.

## 5.2 Patient pathways

Primary care physicians (family physicians, paediatricians and gynaecologists) are patients' first point of contact with the health system. They serve as gatekeepers to more complex medical care. However, gatekeeping can also be performed by specialists employed by the county institutes of public health (e.g. adolescent medicine specialists, mental health and addiction specialists).

Primary care physicians provide basic diagnostics and treatment and refer patients to specialists providing secondary or tertiary care. There they can be treated on an outpatient basis, in day-hospitals or as inpatients. Patients can also, in the case of a sudden threat to their health or life, access emergency care directly. Patient pathways are the same across the whole country but with differences in the availability and accessibility of health services.

**FIG. 5.1** Patient pathways




*Source:* Authors' compilation.

## 5.3 **Primary/ambulatory care**

Primary care services are provided by a network of first-contact doctors and nurses contracted by the CHIF. Every insured citizen is required to register with a family physician (in the case of adults) or a paediatrician (in the case of pre-school children), whom they can choose freely. Primary care physicians can be changed at any time free of charge. They serve as gatekeepers to secondary and tertiary levels of care. Upon referral, patients are free to go to a hospital of their choice.

Following an EU recommendation, a project aimed at ensuring that all family medicine doctors have a specialization in family medicine was started in 2003, with the overall goal of improving the quality of primary care. All practising primary care physicians were required to specialize in family medicine by 2015.

In 2018, out of a total of 2594 medical teams, 1408 were specialists in diverse fields (1033 in family medicine, 283 in paediatrics, 34 in occupational medicine, 40 in school medicine and 18 in other specialisms) (Croatian Institute of Public Health, 2019).

In Croatia primary care comprises the following services:

- general practice/family medicine;
- health care for pre-school children;
- public health;
- women's health care;
- nursing care at home;
- community nurse services;
- dental care;
- dental laboratory services;
- hygienic-epidemiological services;
- preventive-educational measures for health care of school children and students;
- laboratory diagnostics;
- pharmaceutical care;
- urgent medical care;
- palliative care;
- occupational health/sports medicine;
- mental health care, outpatient treatment of mental illness and disorders, including addiction;
- speech therapy;
- midwifery care;
- physical therapy;
- occupational therapy;
- ambulance transport;
- diagnostics in radiology;
- telemedicine;
- environmental health; and
- sanitary engineering.

Primary care services are provided in solo practices, larger units comprising several offices, and county health centres that provide general medical consultations, primary care gynaecology services, care for pre-school children, dental care and community nursing care. Community nursing services comprise various preventive interventions provided in home settings

and focus on patients with chronic conditions, pregnant women and mothers with infants. They are organized by the health centres and are delivered through nurses in cooperation with family physicians.

The number of group practices and interdisciplinary teams in primary care has been growing in recent years, specifically since 2013 when the CHIF started providing financial incentives to all family physicians who choose to open a group practice. Physicians working in concessions had advocated for more independence in business and decision-making, which has led to changes in the Health Care Act. From the beginning of 2019 there is a national upper limit of 25% of physicians and nurses in primary care (i.e. general practice, paediatrics and gynaecology) who can be employed by publicly run health centres. At least 75% work independently in group or, mostly, solo practices.

Each family physician contracted by the CHIF is expected to have at least 1275 registered patients on their roster and the maximum number of patients on a list is 2125. The number of 1700 patients is the commonly used standard, and is important for defining categories in the revenue model. Services are provided by teams consisting of a family physician and a nurse. Primary care for infants and pre-school children is delivered by teams consisting of a paediatrician and a nurse, each with an average of 1200 patients on their roster. They provide preventive care (vaccinations) and general paediatric care. Children are registered with a paediatrician until the age of seven, when they are taken over by a family physician. Primary care gynaecology services include health maintenance examinations and treatment of disorders of the female reproductive system, as well as maternity care. The prescribed standard number of patients per primary gynaecological team (a gynaecologist and a nurse) is 6000 women.

In many areas of the country, there are difficulties in organizing continuous provision of primary care and finding replacements for health workers during annual or sick leave. Moreover, often there is no appropriate communication between family medicine doctors and the community, pharmacists and other health workers. Due to long waiting times, patients often skip primary care to access specialists directly, mainly through emergency departments. Patients tend to have low trust in primary care physicians and rely more on hospital specialists, diagnostics and treatment. A major challenge is that primary, secondary and tertiary care function largely independently from one another, lacking integration and communication.

**BOX 5.2** What are the key strengths and weaknesses of primary care?

The key strengths of the primary care system in Croatia are:

- Primary care is organized according to underlying principles (with the entire population being covered by mandatory health insurance, receiving continuous care throughout their lifespan, the availability of primary care in all parts of the country, and primary care following a holistic approach), ensured through the implementation of integrated measures for the promotion of health and disease prevention, treatment, rehabilitation and palliative care
- A wide range of services is available at the primary care level, including general practice/family medicine, health services for pre-school children, maternal health services, home care and nursing care
- Primary care physicians serve as "gate-keepers" of the health system, ensuring that health care is provided at the lowest possible level of health care provision, in accordance with health strategies and plans

The key weaknesses of the primary care system are:

- Difficulties in the availability of primary care, especially in rural areas and on the islands, due to a shortage of primary care physicians
- Privatization that weakens the role of health centres as key stakeholders in organizing aligned health services at the local level
- Patients tend to have lower trust in primary care physicians and rely more on specialist care, leading to a larger number of referrals to secondary care than would be clinically indicated
- Communication channels are not well established within primary care and between primary care and other levels of care.

Formally, patients cannot access specialists directly (if services are to be paid by mandatory health insurance), unless they have previously consulted a primary care physician or need emergency care. In 2018 there were 38.2 million visits to family medicine offices, of which 12.6 million were with family physicians and 25.6 million with other health professionals (Croatian Institute of Public Health, 2019).

## 5.4 Specialized care

### 5.4.1 *Specialized ambulatory care*

Specialized outpatient care (if paid for by mandatory health insurance) is generally provided at the request of primary care physicians. Specialists fulfil several functions. They:

- operate as consultants, advisers and assistants to primary care physicians in diagnostically and therapeutically unclear cases by providing their expert appraisals;
- conduct more differentiated diagnostic procedures;
- intervene in the communication between primary and inpatient health care; and
- admit patients for treatment or perform requested diagnostic, therapeutic or rehabilitative procedures.

Specialized outpatient care, such as consultations provided by secondary care specialists, is mostly delivered in hospital outpatient departments. Other settings include specialized ambulatory care units in public polyclinics and county health centres (usually linked to general and clinical hospitals) or private facilities. Provision of publicly paid services is subject to a contract with the CHIF. Patients need a referral from a primary care physician to access specialized ambulatory care. There are 22 general county hospitals, five university hospital centres (two in the city of Zagreb and three in the three other major regions of Croatia), three clinical hospitals in the city of Zagreb and a number of clinics and specialized hospitals across the country. In 2018 there were 10.7 million specialist outpatient examinations, of which 10 million were with practices contracted by the CHIF, and approximately 730 000 were with practices not contracted by the CHIF (Croatian Institute of Public Health, 2019).

In the private health care sector patients can directly request specialized outpatient care, mostly in private polyclinics.

### 5.4.2 *Day care*

Hospital day care is defined in Croatia as having the same date of admission and discharge; it generally lasts more than 6 hours and less than 24 hours. Typical examples include haemodialysis, chemotherapy, psychiatric day care, treatment with blood products, day surgery procedures (e.g. for cataract, hernia, varicose veins, carpal tunnel). Recent reforms have aimed to increase the share of cases provided as day care rather than inpatient care (see Section 6.1).

Day care is provided in day care hospital wards and (for haemodialysis) at some health centres. In hospital day care, day care surgery and hospital haemodialysis, there were 613 795 discharges in 2018 and 1 506 428 days of hospital treatment. The most discharges in day hospitals and haemodialysis units were reported in internal medicine services (216 413), haemodialysis units (58 810), paediatric wards (56 372), general surgery (40 778) and ophthalmology (40 242) (Croatian Institute of Public Health, 2019).

### 5.4.3 *Inpatient care*

Inpatient secondary care facilities include general hospitals and specialized hospitals. All general and the majority of specialized hospitals are owned by the counties. While general hospitals primarily serve the population of their respective counties, specialist hospitals serve the entire population. All general hospitals must have the following departments: obstetrics and gynaecology, internal medicine, surgery and inpatient paediatric care. Other departments are optional and depend on the needs of the county population and the availability of hospitals or polyclinics in neighbouring counties. Specialist hospitals are organized around specific acute diseases, chronic illnesses or population groups.

Tertiary care is provided in state-owned university hospitals and university hospital centres. The Minister of Health determines which institutions are classified as a university hospital or a university hospital centre, according to criteria set out in the Health Care Act. In addition to providing care of the highest complexity, tertiary care institutions also engage in medical education and research. University hospitals are general hospitals that provide specialized care at the level of a teaching hospital in at least four specialties. University hospital centres are general hospitals in

which more than half the departments are at teaching hospital level, and which provide medical education in at least half the teaching programmes taught in the faculties of medicine, dentistry, pharmacy and biochemistry.

In order to access secondary or tertiary hospital care contracted by the CHIF, patients need a referral from their primary care doctor, except for medical emergencies. Waiting times for certain diagnostic and treatment procedures are long in some hospitals (e.g. more than 12 months for hip and knee replacements), with major differences between hospitals (CHIF, 2021). Distribution of hospitals is uneven, with the largest number of hospitals located in central Croatia, mainly in the city of Zagreb. In 2019 an external audit was undertaken in 33 hospitals as part of the World Bank Project on Improving Quality and Effectiveness of Health Care Delivery.

**BOX 5.3** Are efforts to improve integration of care working?

Functional integration is one of the core principles of health care in Croatia, according to the 2019 Health Care Act. However, so far no official report on its implementation has been published.

Palliative care is a service developed as an integrated care model, coordinating all levels of health care as well as social care through palliative care coordinators and piloting integrated patient records in one of the country's counties (see Section 5.9).

**BOX 5.4** What do patient think of the care they receive?

In 2017 the Croatian Health Insurance Fund (CHIF) conducted a nationally representative survey exploring the views of 1000 respondents on the health system and the work of health institutions. On a scale of 1 to 5, the average satisfaction with the quality of services and the work of health institutions was 3.2. Respondents identified as the greatest strengths of the health system the performance of medical staff (42.4%), the work of the emergency medical service (40.8%), the attitudes of health professionals towards patients (39.3%) and the availability of health services (37.5%). The waiting lists for diagnostic tests and specialist examinations were identified as the biggest problem in the health system. Respondents were generally satisfied with the primary care system.

## 5.5 Urgent and emergency care

Emergency medical care is provided to anyone requiring urgent attention. It includes emergency outpatient care at the scene, in the resuscitation room/outpatient department of the emergency medicine unit or during transport of sick and injured persons, as well as emergency inpatient care in a hospital. Emergency medicine is organized to be available 24 hours a day as a public service provided on an outpatient and hospital basis.

The national emergency care reform that started in 2009 introduced a country-wide network of County Institutes for Emergency Medicine (each with a dispatch unit) under the umbrella of the Croatian Institute for Emergency Medicine. This national institute coordinates, guides and supervises the work of county institutes of emergency medicine; proposes ways of developing the emergency medicine network; establishes standards of medical equipment, devices and ambulances; defines legally binding standards of procedures, work protocols and conduct; organizes training programmes in pre-hospital emergency medicine; collects data; and runs emergency medicine registries.

County Institutes for Emergency Medicine were established in each of the country's 21 counties. They are responsible for maintaining county call centres and for the provision of emergency care within the county. Care

is provided by two types of mobile teams. Team 1 consists of a medical doctor and a nurse or technician; team 2 consists of two specialized nurses or technicians; this type of mobile team was introduced because of a lack of medical doctors. Both teams have a driver and an ambulance vehicle. At least one emergency team per 25 km radius was planned.

Other goals of the national emergency care reform were to reduce the average response time to 10 minutes in urban areas and 20 minutes in rural areas in 80% of cases, and to reduce the time from the call to the arrival of the patient in the emergency care department and the beginning of the intervention to less than one hour (from two hours before the start of the reform).

The distribution of teams by emergency care units is set out in the Emergency Medicine Network. In 2018, 709 T1 teams operated in 120 emergency care units, and 205 T2 teams operated in 43 emergency care units. In 31 sparsely populated and isolated locations in Croatia emergency care was provided by standby teams. Out of a total of 792 169 interventions in 2018, only 86 017 (10.9%) were classified as being of the highest priority, and 421 255 (53.2%) were classified as being non-urgent and not requiring emergency care (Croatian Institute of Public Health, 2019).

**BOX 5.5** Patient pathway in an emergency care episode

In Croatia a person with abdominal pain on a Sunday morning would take the following steps: the person (or someone else) would call the 112 emergency number (covering since 2008 all emergency services) or the 194 specialized number for emergency medical care. Their call would be answered by a triage assistant who decides whether a mobile team should be dispatched. If a mobile team is dispatched, they make a diagnosis and bring the patient to the nearest emergency department if needed. At the hospital emergency department a specialized nurse performs the triage and classifies the urgency of the complaint. If the county hospital has no emergency department, the patient will be admitted to a surgery or other department to which they are referred by a medical doctor from the emergency care team. The waiting time depends on the urgency of the case. The emergency care pathway may be different in rural areas or on the country's islands.

The 2019 Health Care Act envisages a reorganization of primary care, leading to functional integration in the area of emergency medicine. This implies the participation of health centres and private health workers in the organization and operation of emergency medicine. The aim is to improve the availability, efficiency and quality of primary care by integrating emergency medicine activities and establishing on-call duties at weekends and on public holidays. The new model was supposed to be implemented by June 2019, but no relevant changes had been made at the time of writing (April 2021).

## 5.6 Pharmaceutical care

Pharmaceuticals are sold to the public in pharmacies contracted by the CHIF. The sale of prescription drugs is restricted to pharmacies and dispensing can only be done by a pharmacist. Over-the-counter medicines are dispensed mainly through pharmacies (dispensing can also be done by a pharmaceutical technician), but some over-the-counter pharmaceuticals can also be sold in specialized retail shops, subject to special permission from the Agency for Medicinal Products and Medical Devices (HALMED). In 2018 there were 183 pharmacies (with over 1300 branch offices), and an average of 1396 inhabitants per pharmacist (Croatian Institute of Public Health, 2019). Pharmacies are mainly located in cities and towns, while the pharmacy network in rural and underdeveloped areas remains poorly developed.

Pharmaceuticals covered by the CHIF are classified into two lists: the basic list comprising medicines subsidized within the mandatory health insurance scheme, and the complementary list with medicines partially subsidized by mandatory health insurance, with the remainder paid by patients out-of-pocket. There is also a prescription fee for all reimbursable medicines of HRK 10 (approximately €1) per prescription for those not covered by voluntary health insurance. Due to the digitalization of the primary care system, medicines from the CHIF lists are electronically prescribed.

In addition, there is a list of especially expensive medicines, such as for the treatment of cancer or rare diseases. Such treatments are carried out in hospitals following approval from the Medicines Commission of the hospital in which the insured person is treated. CHIF determines whether the administration of a particular medicine is in accordance with CHIF guidelines on the use of especially expensive medicines.

HALMED oversees and monitors consumption of medicinal products and promotes their rational use. In 2018 the total turnover of medicines in Croatia, according to data from community and hospital pharmacies and specialized drug stores, was approximately HRK 1620 (approximately €220) per capita (HALMED, 2019). Internationally comparable data on the use of generics in the pharmaceutical market, such as those given for a number of countries in OECD Health Statistics, are currently unavailable for Croatia.

**BOX 5.6** Is there waste in pharmaceutical spending?

At present Croatia spends around €100 million on the procurement of medicines for the treatment of cancer. Due to increases in the price of medicines and the number of patients, this amount is increasing on average by €20 million annually. The Ministry of Health aims to achieve savings through joint public procurement with other EU Member States, better control over the consumption of expensive medicines, and an increase in the use of generic drugs. Croatia is taking part in cross-border cooperation to jointly negotiate with the pharmaceutical industry on drug pricing through the Valletta Group (with Cyprus, Greece, Ireland, Italy, Malta, Portugal, Romania, Slovenia and Spain). CHIF's basic list comprises generic drugs whenever available. The use of expensive medicines is coordinated between the CHIF and the hospital commission (Ministry of Health, 2020c).

## 5.7 Rehabilitation/intermediate care

Rehabilitation as a medical specialty was introduced in Croatia in the mid-1950s. Even earlier, in 1947, physical medicine and rehabilitation specialists organized themselves into the Croatian Society for Physical Medicine and Rehabilitation (renamed the Croatian Society of Physical and Rehabilitation Medicine in 2005). The society organizes continuous medical education in physical medicine and rehabilitation, and proposes measures for improving scientific and professional work. In 2019 there were 360 practising specialists and 81 practising residents of physical medicine and rehabilitation (Croatian

Institute of Public Health, 2019). Physical medicine and rehabilitation are provided at primary care level as part of home care services and at the level of secondary and tertiary care with dedicated beds in all types of health care institutions.

Croatia has a number of sanatoria (spas) and medicinal mud baths, which provide prevention, treatment and rehabilitation services using natural mineral springs. Some sanatoria are registered as special hospitals, due to the additional medical services they provide. Most offer services to tourists, generating additional income. Although the ratio of both rehabilitation beds and specialists in physical and rehabilitation medicine per 100 000 population is very high in Croatia compared to other EU Member States, the ratio of physiotherapists and other rehabilitation professionals, such as occupational and speech therapists, psychologists, social workers and nurses, who form an important part of rehabilitation teams, is relatively low. There have also been shortcomings in education, which has been focused on rheumatology rather than rehabilitation, and in the quality and efficiency of rehabilitation medicine. These inefficiencies are now being addressed, including through the introduction of a new curriculum, as part of the process of updating all specialty training in Croatia following EU Directive 2005/36/EC on the recognition of professional qualifications (Vlak et al., 2013).

## 5.8 Long-term care

Croatia's long-term care system is underdeveloped, with little or no coordination between the social welfare, health and war veterans' systems; between national, county and municipal/city levels; or between public and private (not-for-profit and for-profit) providers. Spending on long-term care only made up 3.0% of health expenditure in Croatia in 2018, far below the EU-27 average of 16.1% (Eurostat, 2021). Formal long-term care is underdeveloped and mostly provided in institutional settings.

The benefits available to cover long-term care needs are fragmented, not available to all user groups, and often insufficient to meet basic needs. The burden of long-term care falls disproportionately on family members and a growing informal care sector as part of the grey economy, with considerable scope for exploitation (see also Section 5.9). Flexibility in employment to allow for care leave is uneven and varies from one user group to another (Stubbs & Zrinščak, 2018).

The long-term care system in Croatia is composed of a combination of long-term care benefits that are in-cash and in-kind. Older people with long-term care needs can use a mix of different benefits and services. Two are in-cash benefits (assistance and care allowance and personal disability allowance), while five benefits are in-kind services consisting of help at home (home assistance allowance and organized housing) or in residential settings, such as nursing homes, family homes and adult foster families. Counties are responsible for the operating costs of homes for older people and people with disabilities (Oliveira Hashiguchi & Llena-Nozal, 2020).

In 2018 close to 4% of older people over 65 years received the assistance and care allowance and 0.7% received the disability allowance (Ministry of Demography, Family, Youth and Social Policy, 2019a, 2019b). Less than 1% received formal in-kind home assistance, as eligibility depends primarily on the support of family and friends.

Residential care is provided in nursing homes, family homes and adult foster families. Residential care is called "accommodation" in Croatia. Accommodation combines lodging with help with ADLs and IADLs, and can be provided by the state, counties or by private organizations such as non-governmental organizations (NGOs) or religious communities. In addition, family homes and foster care families provide accommodation in private households for older people, combined with ADLs and IADLs. Family homes and foster homes are both considered as non-institutional care in Croatia. About 3% of older Croatians received a form of public residential care in 2018 (Ministry of Demography, Family, Youth and Social Policy, 2019a, 2019b).

In 2017 a Social Welfare Strategy for Older People for 2017–2020 was adopted. In 2018 a project funded by the European Social Fund started, providing help with daily activities to 12 000 older people, especially in rural areas and on the islands. The project aims to provide care to older people, as well as employment to long-term unemployed women. The duration of projects across counties is defined by deadlines (mostly until 2021), so new ways of financing should be found.

The health care needs of older people are served through the health system, including palliative care and home care at primary care level. Chronic care beds are in wards for long-term treatment, palliative care, chronic mental disease, physical medicine and rehabilitation in special hospitals and resorts, chronic child diseases and chronic pulmonary diseases. The number of hospital discharges (including hospital rehabilitation) for patients aged

65 years and older in 2018 was 246 884, accounting for 37% of all hospital discharges (Croatian Institute of Public Health, 2019).

## 5.9 Services for informal carers

Despite changes in the social structure, including families, and the weakening of traditional intergenerational support, spouses and children still play an important role in the provision of informal long-term care.

In Croatia, as in all other EU countries, family members, friends and other relatives represent the vast majority of carers for people with disabilities and dependent older people. While it is difficult to get comparable data across countries on informal carers, the Survey of Health and Retirement in Europe (SHARE) allows the measurement of the share of informal carers aged 50 and over who provide any help to older family members, friends and people in their social network. In Croatia about 19% of people aged 50 and over helped someone in their social network with everyday life activities and 13% provided help at least weekly. These shares are equivalent to over 326 000 people and 223 000 people respectively. In comparison, the share of people aged 50 and over providing informal care at least weekly is close to 20% in the Czech Republic and Belgium, and less than 10% in Portugal and Poland. On average across EU countries for which data is available, around 21% of people aged 50 and over report providing informal care, and 13% at least weekly.

According to the SHARE dataset, carers are mainly women who care for a spouse, a parent or a parent-in-law: in Croatia about 55% of carers aged over 50 are women. The gender imbalance in the provision of care varies by the intensity of care, with women representing 64% of daily carers. About two thirds of carers are looking after a parent or a spouse, but patterns of caring vary for different age groups. Younger carers (aged between 50 and 65) are much more likely to be caring for a parent. Carers aged over 65 are more likely to be caring for a spouse. Caring for a spouse tends to be more intensive.

A spouse or a partner under age 65 can be formally recognized by the state as a caregiver for an older person if the care recipient needs permanent support to maintain life. The recognition of such status enables informal carers to be covered by social schemes (pension, health and unemployment schemes). The monthly allowance for the caregiver is funded by the state

and corresponds to HRK 4000 (US$630). According to the 2008 Maternity and Parental Benefits Act, parents are entitled to sick leave or part-time work to care for children with severe developmental disabilities.

## 5.10 Palliative care

The establishment of palliative care has been one of the priorities of the National Health Care Strategy 2012–2020. In 2013 the Government adopted the Strategic Plan for Palliative Care 2014–2016, setting out a model of integrated palliative care to be implemented nationally. This model incorporated palliative care into all levels of care (from primary to tertiary), and into the wider welfare system (Loncarek et al., 2018). The Strategic Plan was followed by the National Palliative Care Development Programme for 2017–2020, which envisaged that that all counties would adopt county-level palliative care plans. Its aims include the further development of the palliative care system for identified palliative care needs, the further establishment of organizational forms and integration of palliative care, continued palliative care education, and the development of national guidelines and recommendations for the delivery and development of palliative care for patients and their families (Vočanec et al., 2021). In 2018 there were 265 palliative beds in secondary care (some of them in specialized hospitals for long-term and palliative care) and 15 palliative beds in tertiary care (Croatian Institute of Public Health, 2019). At the level of primary care, 22 mobile palliative teams and 29 palliative care coordinators have been contracted, with 30 mobile teams and 23 coordinators still lacking, according to the Network of Health Services.

## 5.11 Mental health care

Mental health services are mainly provided in institutions, in particular hospitals. Psychiatric beds are located in general and clinical hospitals, as well as in specialized psychiatric hospitals. Community mental health care, except for certain programmes such as prevention of addiction, remains underdeveloped, and well-organized programmes of mental health care in the community are lacking. However, in 2018 the CIPH, in cooperation with the Trimbos Institute, the Netherlands, developed several guidelines for ensuring optimum health care for people with mental health disorders, with

an emphasis on community care. These guidelines were intended to serve as a basis for the next mental health strategy that was being developed. A pilot project which includes mobile mental health teams is currently being carried out with participation of the Trimbos Institute, the University Hospital Centre Zagreb and the Croatian Institute of Public Health. Geographical access to mental health care differs across the country, with more services available in Zagreb and large cities.

The Croatian Parliament approved the Act on the Protection of Persons with Mental Disorders in 1997, setting out their rights to protection and care. It also specifies the conditions under which these rights can be limited, elaborates the procedures to be followed, and sets out the right to protection from mistreatment.

In 2010 the Ministry of Health adopted the Mental Health Care Strategy for 2011–2016. Its objectives included:

- improving the mental health of the population;
- promoting awareness of mental health issues;
- improving preventive activities in the area of mental health care;
- ensuring early intervention and treatment of mental disorders;
- improving the quality of life of people with mental disabilities through social inclusion and protection of their rights and dignity;
- harmonizing the strategy with other strategies and programmes addressing mental health; and
- developing and improving information systems and research in the area of mental health.

A national strategy for mental health for the period 2021–2030 has now been developed, but not yet adopted at the time of writing (April 2021).

Geographical access to mental health care differs across the country, with more services available in Zagreb and large cities. As mentioned, mental health services are mainly provided in institutions. In terms of hospitalizations in 2018, the group of mental disorders ranked ninth, with 5.8% of total hospitalizations. However, with a share of 17.2%, it ranked first as a share of total hospital treatment days (Croatian Institute of Public Health, 2019). This high rate of hospitalization impairs the quality of life of mental health patients and prevents them from being integrated in society. Since 2009 centres for mental health protection and prevention of addiction have formed part of the county institutes of public health.

## 5.12 **Dental care**

The basic package of dental services covered by the CHIF ensures almost all basic dental procedures (restorative, endodontic, basic periodontal, oral surgery, oral diseases, specified orthodontics up to 18 years of age, and some prosthodontics) and emergency dental care. The CHIF manages the content and price of each service provided within the mandatory health insurance scheme and actively checks billing to ensure that bills reflect the amount of work done. The Croatian Dental Chamber sets standards for services and is responsible for monitoring the quality of dental care.

Dental services are delivered through a network of dental offices, with teams consisting of a dentist and a dental assistant. In 2018 the Dental and Oral Health Service included 1896 teams (1839 doctors of dental medicine, 1 specialist in child and preventive dental medicine, and 56 other specialists). In addition, 653 non-contracted teams provided dental care (665 doctors of dental medicine, 27 specialists in child and preventive dental medicine, and 51 other specialists) in the private sector (Croatian Institute of Public Health, 2019).

Geographical accessibility of dental services is good, although with some variation across the country. As for most other health services, access is more limited in rural and underdeveloped areas and on the islands.

The "dental passport" is a national preventive programme, aimed at improving oral health among pre-school and elementary school children. School medicine specialists refer children to the dentist to assess their dental status in the 1st and 6th grades of elementary school.

# 6

# Principal health reforms

## Summary


- In recent years Croatia has undertaken important reforms in health financing, primary care, hospital care, public health, pharmaceutical policies and palliative care.

- The reforms aimed to make health financing more sustainable, strengthen primary care, reduce hospital capacity and improve access to palliative care and expensive pharmaceuticals.

- Progress in implementation has varied, with implementation still at an early stage in the areas of hospital reform, primary care and human resources management and planning.

- The National Development Strategy for 2020–2030 is anticipated to be a key strategic document to direct future efforts. Other important strategic documents include new national disease prevention and public health programmes.

## 6.1 Analysis of recent reforms

**TABLE 6.1** Major health reforms

| YEAR | REFORM FOCUS | IMPLEMENTED |
|---|---|---|
| 2013 | New financing model for primary health care | Implemented |
| 2014 | Palliative care reform | Implemented |
| 2015 | Croatian Health Insurance Fund separates from the State Treasury | Implemented |
| 2015 | New financing model for hospitals | Partially implemented |
| 2015 | Strategic Plan for Human Resources in the health sector | Partially implemented |
| 2017 | Hospital restructuring (functional integration model) | Partially implemented |
| 2017 | Hospital priority waiting lists | Implemented |
| 2019 | Increase of health insurance contribution rate to raise CHIF revenue | Implemented |
| 2019 | Abolition of concessions and further privatization of primary care practices | Implementation ongoing |
| 2019 | Introduction of the Central Management System | Implementation ongoing |
| 2019 | Rationalization of public health and health quality agencies | Implemented |

*Source:* Authors' compilation.

### Financing

#### Financing of the CHIF

Between 2002 and 2015 funds allocated for health care were determined annually by the state budget and collected through the State Treasury. The CHIF received its funds from the state budget. These funds originated from three sources: contributions for mandatory health insurance, funds collected by general taxation and county funds collected from regional taxes (Voncina, Dzakula & Mastilica, 2007). In 2015 financing of the CHIF was separated from the State Treasury (as it had been in 1990–2002), which enabled it to manage earmarked funds for health care independently. Some of the benefits expected from the separation were improved transparency in health care financing, stabilization of the health care budget, more efficient cost

management and the introduction of payment mechanisms that incentivize the quantity and quality of services (CHIF, 2014).

### World Bank loan

In 2014 Croatia signed a Loan Agreement for over €75 million with the World Bank for the Improving the Quality and Efficiency of Health Services Programme. This Programme supported five of the eight priorities of the 2012–2020 National Health Care Strategy aimed at resolving the biggest reform challenges in the health sector, including strengthening management capacity in health care, reorganizing the structure and activities of health care institutions, improving the quality of health care, strengthening preventative activities and preserving the financial sustainability of the system (World Bank, 2014b). The Programme closed on 31 October 2019. It was rated by the World Bank as moderately satisfactory in achieving project development objectives and overall implementation progress (World Bank, 2019b).

### Increase in health care revenue

A higher health insurance premium is expected to improve the financial situation of the health system. Since January 2019 the health insurance contribution rate has increased by 1 percentage point, to 16.5% of gross salary for all employees, increasing the reliance of health financing on the working population. According to official estimates, this should increase contributions by 0.4% of GDP (an increase of roughly 6% of the total revenue of the CHIF). No measures are currently planned to broaden the base of paying users beyond those in employment. Similarly, no specific plans have been disclosed to address the current stock of arrears in hospitals' finances (European Commission, 2019a) (see below and Chapter 3).

## Primary care

### Group practices, payment by quality and performance

In 2013 several changes were introduced to the financing of primary care. In addition to the basic income (including fixed office maintenance

expenses, income per insured person by age group and per diagnostic-therapeutic procedure), additional revenue opportunities were established. These were based on specific quality and efficiency indicators, as well as for providing preventive check-ups, forming group practices and engaging in e-health services, counselling groups and phone consultations. These additional revenue opportunities can amount to 5–7.5% of the basic income (CHIF, 2013).

### Abolition of concessions and introduction of private practices

With the 2019 Health Care Act the privatization of primary care has been continued through weakening the role of county health centres as key stakeholders in governing the organization of primary care for their respective population (see Chapter 5). The upper limit of primary care professionals that are employed within county health centres decreased from 30% to 25%.

Concessions, which had been given approval by the local or regional authority based on the public health service network, have been turned into practices approved by the Ministry of Health, allowing providers to enter contracts with the CHIF, local or regional authorities, voluntary insurers, universities, etc. Concessions allowed for greater control over private practices in primary care, and private physicians sought to weaken this regulatory mechanism and to treat practices as their private investment.

## Hospitals

The National Hospital Development Plan was adopted in September 2018. Building on a previous document for 2015–2016, it sets out "functional integration" as one of the main principles in facilitating the modernization and restructuring of hospitals, as well as in improving quality of care. The process was initiated in 2017, but no official report detailing the content or the progress of implementation has been published so far. Furthermore, this reform of the hospital system does not take full consideration of the parallel initiatives in strengthening outpatient care. The two processes do not appear to be well coordinated, posing the risk of unsatisfactory outcomes (European Commission, 2019a). Functional integration envisages the integration of hospitals within five regions (Central (including the city of Zagreb), North,

East, West and South), reorganizing them according to modality of care: day care, acute care and long-term care hospitals. The reorganization aims to emphasize day care hospitals and decrease acute care capacities in favour of chronic care, long-term care and palliative care capacities. Emergency hospital care departments are planned to be centralized within a hospital as opposed to each department (i.e. internal medicine, neurology, surgery, etc.) having separate emergency entrances. It is hoped this will contribute to horizontal integration with the outpatient emergency service and overall better care for emergency patients (Ministry of Health, 2018b).

**BOX 6.1** Main reforms planned for the hospital sector

- Functional integration
- Decrease of acute hospital beds
- Increase of day care hospitals
- United hospital emergency admission
- Changes in hospital payment model
- Addressing hospital debts

In 2015 the CHIF started paying hospitals part of their monthly revenue upfront and disbursed the remainder after the services had been delivered. Since 2020, 100% of hospital income has been paid in advance (up from 90% in 2019) and the hospitals then provide invoices based on episodes of care. The payment model introduced since 2015 also involves monitoring five quality and efficiency parameters. Since the introduction of these changes hospitals appear to have reduced average length of stay, increased provision of day care and same-day surgery, increased the number of outpatients in specialist care and increased the number of surgical operations and procedures performed. The new model was also hoped to lead to improvements in quality of care, but it is currently not possible to measure whether this aim has been achieved, as quality management systems in hospitals are only starting to be developed (Poslovni dnevnik, 2015).

Some hospitals in the country provide services in excess of the limits set by the CHIF, while others maintain capacities greater than the needs of the population they serve. While the authorities have announced plans

to increase the spending limits for hospitals across the board, the system is likely to remain prone to accumulation of arrears, as long as the spending limits are not brought closer in line with the types and amounts of services provided in each of the hospitals (European Commission, 2019a).

### Priority waiting lists

In 2017 the Ministry of Health introduced a new management system for hospital waiting lists, called "priority waiting lists". The new system started for several months as a pilot programme in four hospitals in Zagreb, and was then implemented nationwide. It has been designed for patients who are suspected of suffering from a serious illness, such as a tumour, which, although not immediately life-threatening, necessitates accelerated diagnosis and treatment. Some 10% of places on the existing waiting lists are reserved for priority patients with suspected serious illness. Patients on priority waiting lists are referred to a specialist by their GP. The specialist consultation is to take place within one week of the referral. Priority waiting lists are implemented in 27 acute hospitals, while in others the implementation is still ongoing. Priority referral justification analysis has shown that over 92% of referred patients required priority diagnostics and treatment (Brekalo, 2017; Government of the Republic of Croatia, 2019; Ministry of Health, 2020b).

## Public health

### E-health solutions

In 2014 the Croatian Government launched the e-Citizens portal, enabling citizens to communicate with the entire state administration system via a personalized electronic mailbox. With regard to health care, citizens can access information on their chosen primary health care physicians, request a European Health Insurance Card, retrieve information on filled drug prescriptions, their e-orders and available dates for health care services, as well as information on their health insurance policy status (CHIF, 2020b).

E-health solutions have the potential to improve the efficiency of the health system in Croatia. E-prescriptions have been successfully introduced and are fully operational. E-referrals and electronic health records are still under development. Planned investment in equipment in health centres is

expected to improve the system's capacity for the further development of e-health services (European Commission, 2019a).

### The Law on Health Data and Information

In 2019 the Croatian Parliament adopted the Law on Health Data and Information. The law sets out a legal framework for the use and management of health data and information and for quality assurance at the national level (Republic of Croatia, 2019a).

### Central Management System

In 2019 the Central Management System was formally introduced as the new IT support system for managing the organizational structure of health care providers, particularly hospitals. The system was established by the Ministry of Health in cooperation with the CHIF and the Croatian Institute for Public Health. It is seen as a qualitative step forward in the exchange and analysis of hospital and public health data and builds on the data exchange established by the Central Health Information System (see Section 2.6). The main objectives of establishing a Central Management System are to gain a better central oversight over the organizational structure of health care institutions, allow the creation and distribution of notifications, have a better overview of the supply of pharmaceuticals, and increase the transparency of hospital spending and effectiveness (Tomic, 2019).

### Rationalization of public health and health quality agencies

With the 2019 Health Care Act and the Act on Quality in Health Care, the Institute for Health Protection and Safety at Work and the Institute of Toxicology and Anti-Doping have been merged into the Croatian Institute of Public Health, while the Agency for Quality and Accreditation in Health Care has been merged into the Ministry of Health (Republic of Croatia, 2019b, 2019c).

## Human resources

### Strategic Plan for Human Resources

In 2015 the Government adopted the Strategic Plan for Human Resources in Healthcare for 2015–2020. The Plan recognizes that one of the fundamental problems in the area of human resources development in the Croatian health system is the lack of a human resources management system. A comprehensive system for monitoring human resources in the health system is needed in order to improve projections of supply and estimates of needs (both in terms of numbers and types of health professionals). The Plan envisages the development of a system for the organization and active management of human resources in the health sector with the aim of achieving a sufficient and adequate staff structure. Implementation has been limited so far, with no available information on progress achieved.

In 2018 HRK 82.2 million in grants was awarded within the Operational Programme for Efficient Human Resources for Croatia in 2014–2020, funded by the European Social Fund. The primary goal of this grant has been to improve access to primary care in deprived parts of Croatia by financing the training of 76 specialists in family medicine, paediatrics, clinical radiology, emergency medicine and gynaecology and obstetrics in those areas (Ministry of Health, 2018a).

## Access to expensive medicines

Apart from the CHIF's fund for very expensive drugs, whose revenue has been increasing markedly over recent years, in 2017 the Government established a fund for very expensive drugs to which private donations can be made, in order to finance very expensive drugs that are not covered by the CHIF.

### Palliative care

The 2014–2016 Strategy for Palliative Care has been extended for the 2017–2020 period. The strategies greatly enhanced capacity for palliative care by improving integration and coordination, rather than developing new structures. Guidelines have been adopted and palliative care services established in inpatient and outpatient settings. Several county-level palliative care plans have been adopted, in accordance with the 2017–2020 strategy. The strategy is continuously implemented and shows measurable results.

### Reforms which failed or were passed but never implemented

Hospital restructuring to achieve greater functional integration has not been implemented and, except for a few cases of hospital mergers, it is not possible to determine how far the strategic plan has been achieved. Likewise, the issue of hospital debts has not been addressed, but continues to be discussed between the central Government (Ministry of Health, CHIF and Ministry of Finance) and hospitals.

The envisaged human resources management system has not been developed at the time of writing (April 2021), and although the number of medical residents has increased, it is not possible to identify a systematic human resource management policy in any other segment of health care.

## 6.2 Future developments

### National Development Strategy for 2020–2030

The process of drafting the National Development Strategy for 2020–2030 began in 2017. It was the first comprehensive strategic planning initiative since the establishment of the Republic of Croatia. The National Development Strategy for 2020–2030 is anticipated to be the basis for planning the budget and programming of financial resources from EU funds and other international sources available to Croatia after 2020. The Ministry of Regional Development and EU Funds coordinated the strategy development process and representatives from the Ministry of Health and

other health sector stakeholders participated in thematic working groups and working groups for horizontal policies. The National Development Strategy for 2020–2030 was adopted in February 2021 (Republic of Croatia, 2021). The main strategic goals related to health care are: 1) Improving the health of citizens throughout their life course; and 2) Improving access to and quality of health services and creating an efficient health system.

7

# Assessment of the health system

## Summary

- Health reforms are guided by a national health strategy, but do not always correspond to it in practice.

- Accessibility of services is generally high, given the country's near-universal population coverage, a wide range of services covered by mandatory health insurance and low out-of-pocket payments, but there are geographical barriers, as well as long waiting times, which are likely to have increased as a result of the COVID-19 pandemic.

- Unmet medical need due to cost is relatively low and has been on the decline over the past few years, decreasing from 6.3% of the population in 2010 to 0.3% in 2019. However, the poorest are more affected and there are substantial unmet needs due to distance.

- Improving health care quality is an explicit policy aim, but so far a comprehensive quality improvement strategy with an action plan that defines priorities, performance indicators and roles/responsibilities is missing. The standardized 30-day hospital mortality rate for acute myocardial infarction (AMI), a commonly referenced indicator for the quality of hospital services, is much higher in Croatia than in most other EU countries.

- There is no system in place for monitoring health system outcomes. Several mortality rates are among the highest in the EU, including mortality from cancer, preventable causes (including lung cancer, alcohol-related causes and road traffic deaths) and air pollution. Croatia has also been severely affected by the COVID-19 pandemic, with COVID-19 recorded as cause of death for 7% of all deaths in 2020.

- Croatia spends a larger share of its health expenditure on pharmaceuticals and medical devices than many other EU countries, while spending on long-term care only made up 3.0% of health expenditure in Croatia in 2018, much lower than the EU27 average of 16.1%. Challenges to improving the allocation of resources include a continued emphasis on hospital-centric care and deficiencies in primary care, while technical inefficiencies exist in both hospital and primary care, which impedes the optimization of outputs in relation to the resources invested.

## 7.1 Health system governance

The Ministry of Health has a central role in health system governance, both with regard to decision-making and in terms of developing strategies and reforms. Reforms are developed with formal consultation processes in place to engage with relevant experts. The broader planning framework consists of the National Health Strategy and the National Health Plan. The latest planning period of the National Health Strategy covered the years 2012–2020 and the Croatian Institute of Public Health assisted in formulating its objectives. The National Health Development Plan for 2021–2027 was under development at the time of writing (April 2021). However, new strategies and reforms often seem to be developed rather hastily, are politically influenced and take into consideration only a small part of stakeholder perspectives, resulting in suboptimal implementation and results (Ostojić, Bilas & Franc, 2012; European Commission, 2019c). Furthermore, there is a lack of continuous and constructive evaluation processes that would allow for future improvement and adjustments.

In terms of transparency, informal payments in health care exist but seem to be less prevalent than in some other European countries. In a 2019

survey 7% of respondents who had been to a health care practitioner in the public sector in the previous 12 months indicated to have made an extra payment or a valuable gift to a nurse or a doctor or made a donation to the hospital (European Commission, 2019d). Reasons for making informal payments vary, but people often aim to ensure better quality of care or reduced waiting times (Vončina & Rubil, 2018).

Regarding the extent to which people are aware of the health benefits to which they are entitled, the situation is suboptimal. Because there seem to be few repercussions for violating patient rights, patients might not step forward or might consider possible violations as a standard part of the doctor-patient relationship. Furthermore, reports on the work of County Commissions for Patient Rights are not made public.

## 7.2 Accessibility

According to the 2019 Health Care Act, "every person has the right to health care and the opportunity to achieve the highest possible level of health, in accordance with the provisions of this Act and the law governing mandatory health insurance in the Republic of Croatia" and "health care of the population of the Republic of Croatia is carried out in line with the principles of comprehensiveness, continuity, accessibility and a comprehensive approach in primary health care, a specialized approach in specialist-consultative and hospital health care, and in line with the principles of subsidiarity and functional integration" (Republic of Croatia, 2019c).

Over 99% of the population is covered by the mandatory health insurance system, with one universal benefits package. In addition to mandatory health insurance, there is the possibility of voluntary health insurance in the form of complementary and supplementary health insurance. Mandatory health insurance provides access to primary care (GPs or family physicians, paediatricians and gynaecologists, as well as dental care and obligatory vaccinations), specialist inpatient and outpatient care, as well as medicines. Access to hospitals requires referral by a family physician, except for medical emergencies. Rights are comprehensive and health care is formally accessible by all, regardless of health or socioeconomic status. Co-payments for visits to doctors, hospital stays and medicines are covered by complementary health insurance, which is taken out by a large part of the population; moreover, children under 18, people with disabilities, war veterans, family members of

deceased war veterans, and those on low incomes are exempt from charges (Stubbs & Zrinščak, 2018).

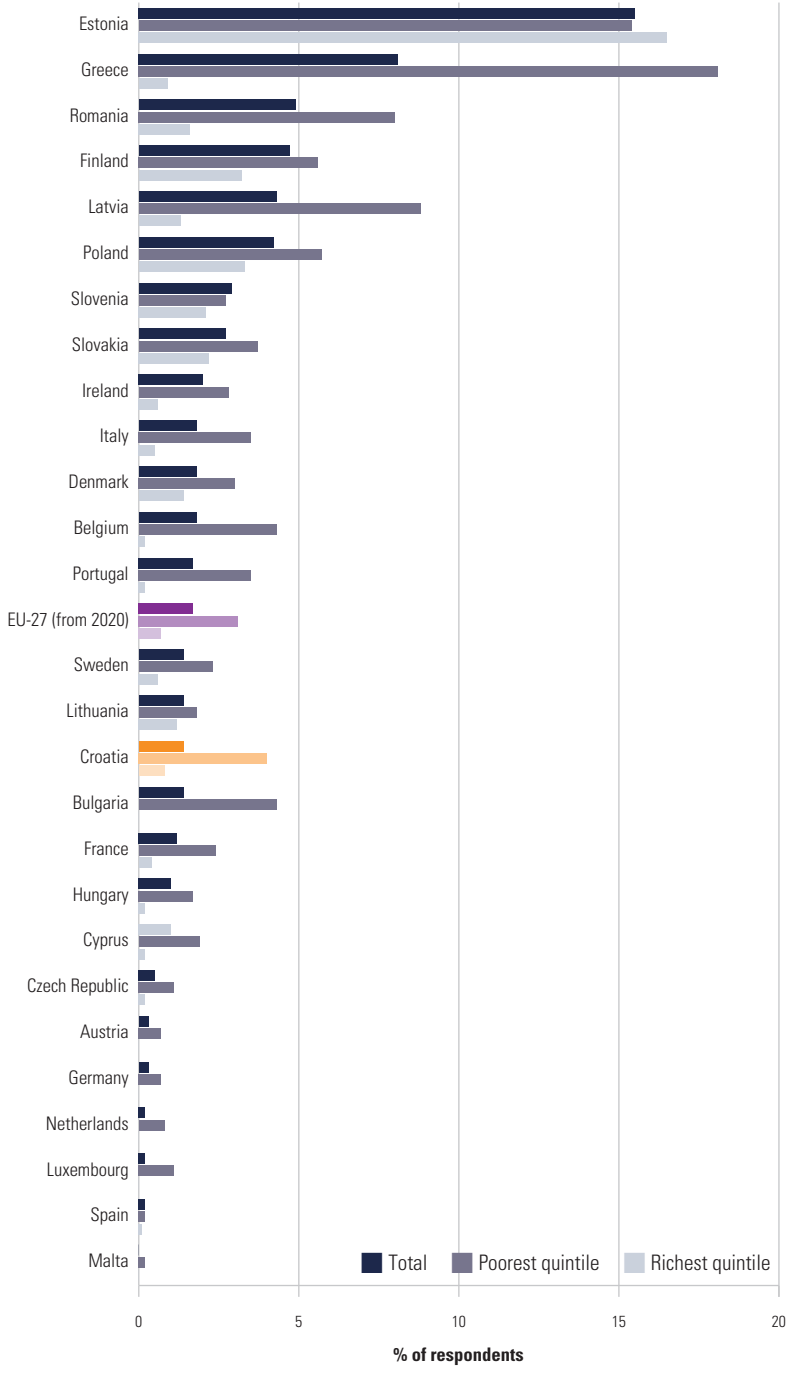
Actions taken by the government to improve the accessibility of health care comprise subsidizing fully mandatory and complementary insurance coverage for particular subgroups, including those whose monthly income does not exceed HRK 1563 (approximately €207) per household member (Republic of Croatia, 2020b), and reimbursement of transport costs if the health facility is more than 50 km away (Vončina et al., 2018).

The Eurostat data for 2019 based on SILC data (Figure 7.1) show that 1.4% of respondents expressed an unmet need for medical examination and care, due to cost, distance or waiting time/long waiting lists. While this was below the EU average (3.1%), this share increased to 4.0% among the poorest income quintile, compared to 0.8% among the richest quintile. It is unclear why unmet needs among the poorest groups are so much higher, given the country's near universal coverage and low out-of-pocket payments (World Bank, 2019c).

Geographical distance is a relevant barrier in rural, poorly populated and remote areas, especially on islands. In 2019, 0.7% of the population expressed an unmet need due to geographical distance, with the EU-27 average being 0.1%. In the same year 0.4% mentioned waiting lists as the reason for unmet need (Eurostat, 2021).

Long waiting lists are one of the longstanding challenges for the Croatian health system (Stubbs & Zrinščak, 2018). According to information published by the CHIF in December 2020, the waiting time for the first cataract surgery in clinical hospitals and university hospital centres (1st hospital category) was 327 days, and 550 and 283 days respectively in hospitals in the 2nd and 3rd hospital categories (comprising general and specialist hospitals) (CHIF, 2020c). The waiting times for total knee replacement surgery were 454, 122 and 40 days respectively, and for total hip replacement 304, 118 and 101 days respectively. While there was an increase in teleconsultations in primary care in 2020, which made up for the decline in in-person consultations, waiting times for elective surgeries are bound to have increased in 2020 and 2021 as a result of the COVID-19 pandemic and the reorganization of resources to meet the needs of COVID-19 patients.

**FIG. 7.1** Unmet needs for a medical examination (due to cost, waiting time or travel distance), by income quintile, EU/EEA countries, 2019




*Source:* Eurostat, 2021, based on SILC data.

Waiting times are not due to a shortage of beds per se. Hospital bed capacity is slightly below the average in the Member States that joined the EU since 2004 (EU-13), but still much higher than in the Member States that were part of the EU before 2004 (EU-15) (World Bank, 2019c). In 2018 Croatia had 5.6 hospital beds per 1000 population, slightly above the EU-27 average of 5.0, with an occupancy rate of 74.7% for curative (acute) beds, higher than the 73.5% in 21 EU Member States (OECD/European Union, 2020).

Accessibility is impacted by a shortage of qualified health workers. In 2018 there were 340 practising doctors per 100 000 population, compared to an unweighted EU-27 average of 380. General practitioners constituted 18% of practising doctors. Since EU accession on 1 July 2013, 932 doctors have left Croatia (Croatian Medical Chamber, 2020). For some time doctors have been expressing dissatisfaction with their working conditions, poor professional status and career opportunities, and low salaries (Croatian Medical Chamber, 2016).

In 2018 there were 670 practising nurses per 100 000 inhabitants, compared to an unweighted EU-27 average of 820. The ratio of nurses to doctors was 1.9, which was below the EU-27 average of 2.3 (OECD/European Union, 2020). Similarly to doctors, nurses have long expressed dissatisfaction, primarily with their working conditions. Although nursing education is aligned with EU standards, professional roles, responsibilities and salaries in health care practice often do not correspond with levels of nursing education (high school, bachelor and master's levels).

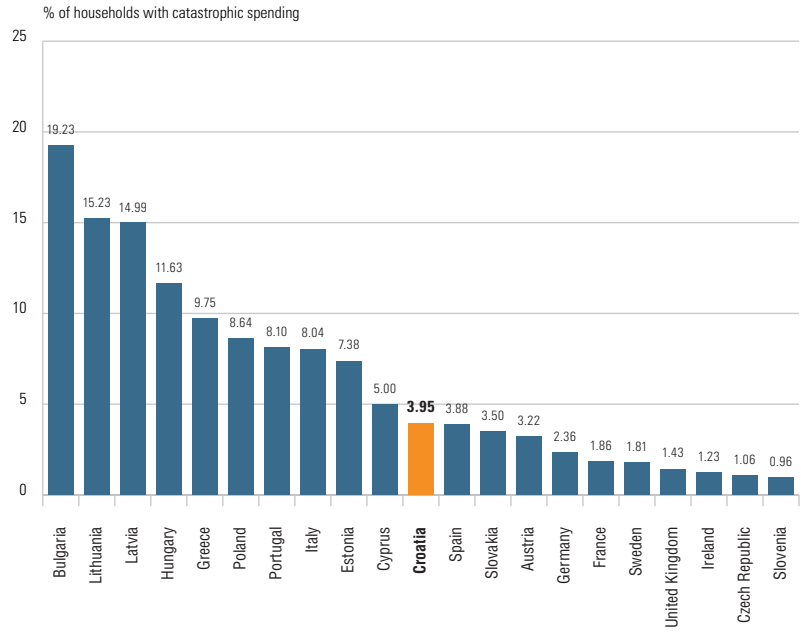
## 7.3 Financial protection

With mandatory health insurance covering over 99% of the population, a wide range of services covered by mandatory health insurance, and a cap of HRK 2000 (~€270) for each episode of treatment, the Croatian health system offers a high degree of financial protection compared to many other EU countries (see Chapter 3).

Only around 14% of the population is subject to user charges by being either not exempted or not covered by the complementary health insurance system (World Bank, 2019c). Out-of-pocket payments for health accounted for 10.5% of current health expenditure in 2018, which was below the EU-27 average of 15.5% (Eurostat, 2021). As a share of household consumption,

out-of-pocket payments amounted to slightly less than 3%. In 2014, 4% of households (around 50 000 households) experienced catastrophic out-of-pocket payments (Figure 7.2), down from 6% in 2010 and 2011. The majority of out-of-pocket payments are spent on medicines (B List and over-the-counter medicines) and dental care (Vončina & Rubil, 2018).

**FIG. 7.2** Share of households that experienced catastrophic health expenditure, latest year




*Source:* WHO Regional Office for Europe, 2019.

*Note:* Data for Croatia are from 2014. Catastrophic expenditure is defined as household out-of-pocket spending exceeding 40% of total household spending net of subsistence needs (i.e. food, housing and utilities).

Unmet medical need due specifically to cost is relatively low and has been on the decline over the past few years, decreasing from 6.3% of respondents in 2010 to 0.3% in 2019. However, the poorest are more affected. While in 2010 about half of all unmet need due to cost was among the poorest quintile, in 2017 the poorest quintile accounted for almost 85%. In the population aged 65 and older, unmet medical need due to cost affected 4.4% among the poorest (i.e. first) quintile (compared to 2.8% in the EU-27), but only 0.4% in the second (compared to 1.6% in the EU-27) and 0.2% in the third quintile (compared to 1.4% in the EU-27) (World Bank, 2019c).

## 7.4 Health care quality

Croatia has been developing a quality monitoring and analysis system for more than 15 years. One of the strategic goals of the National Health Care Strategy 2012–2020 was to improve the efficiency and effectiveness of the health system, and one of its priorities was to improve quality of care, including through clinical guidelines, accreditation, payment related to quality, and health technology assessment (Ministry of Health, 2012).

However, a comprehensive quality improvement strategy with an action plan that defines priorities, performance indicators and roles/responsibilities is still missing (World Bank, 2019c). Interest in quality issues comes from different sides (including the Ministry of Health, the Croatian Health Insurance Fund and civil society) but there is no systematic approach to quality management in health care.

In a development that may undermine attempts to strengthen quality assurance mechanisms, in 2019 the Agency for Quality and Accreditation in Health Care was abolished and its responsibilities subsumed under the Ministry of Health. The roles of the quality and accreditation unit, as well as of health technology assessment (HTA) within the governance of quality care, are limited, given the multitude of independent players (World Bank, 2019c).

The Croatian Health Insurance Fund monitors the quality of payments in primary health care and the measurement of some outcomes in secondary health care. However, it does so in a fragmented way and it is not clear how the data collected can contribute to the improvement of the system. Mechanisms and processes for the systematic evaluation of the quality and completeness of the data collected as well as remedial actions are not clearly described and implemented (World Bank, 2019c).

Despite the existence of a wealth of patient level data in the system, including data on prescriptions, clinical diagnosis and laboratory test results, many basic quality indicators on compliance rates with evidence-based practices are not easily available for basing decisions and/or policy-making (World Bank, 2019c). The data available on quality of care relate mostly to the domains of effectiveness and efficiency, with very limited or no data on other domains such as timeliness, patient-centredness and safety. Data on hospital waiting lists are not always sufficiently accurate and up to date to enable improvements (World Bank, 2019c).

There is insufficient information on the quality of primary care. No data are available on avoidable hospital admission rates for conditions that could be managed at primary care level, such as asthma, chronic obstructive pulmonary disease, congestive heart failure, hypertension and diabetes. Data on adherence to best practices, such as testing once a year for HbA1c in diabetes management, are unavailable (World Bank, 2019c).

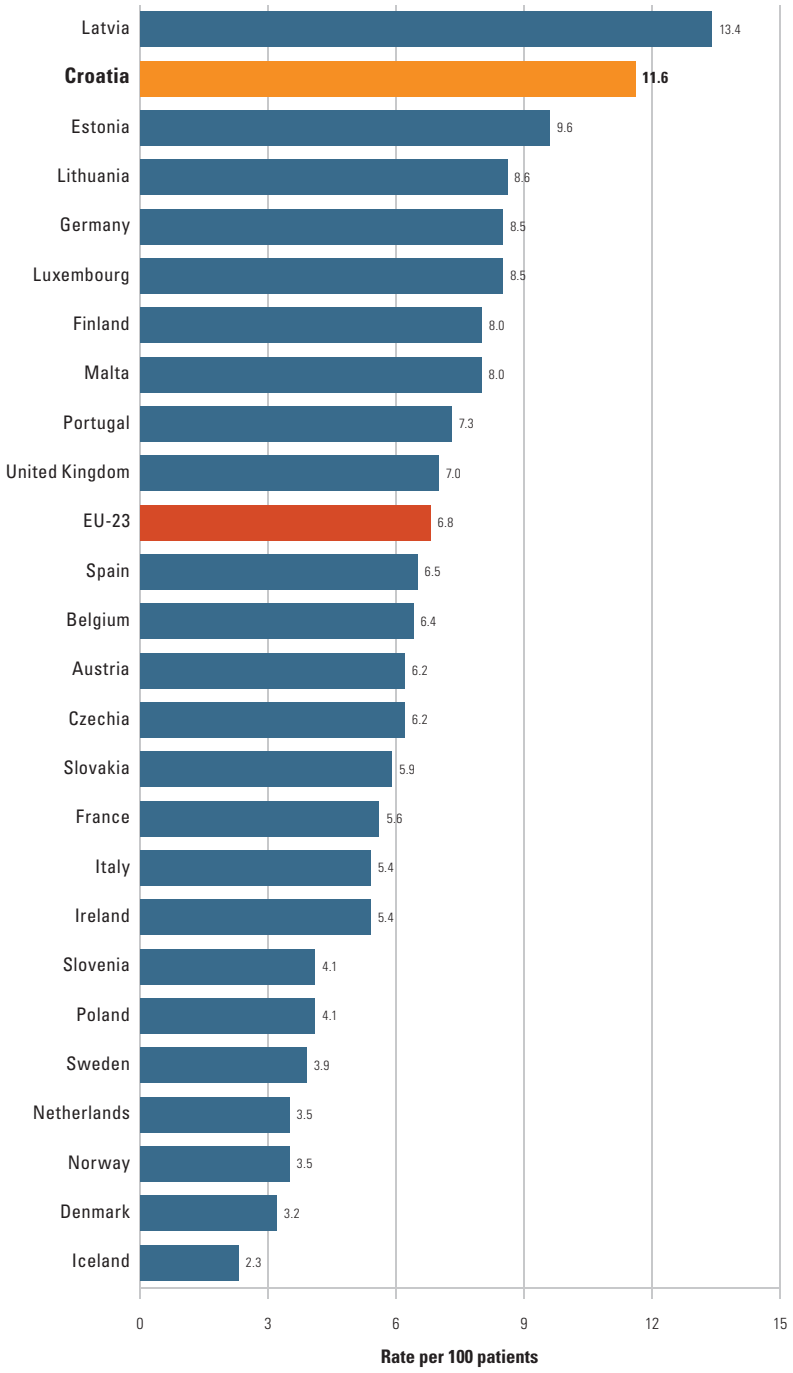
Referral rates from primary to specialized care have declined substantially in recent years, from 26.2% of visits in 2008 to 15.1% in 2017, which could be due to improvements in the quality of primary care. However, there are wide variations across counties, ranging in 2017 from 9% to 23.4% (World Bank, 2019c).

The high utilization of emergency care services for non-emergency conditions suggests deficiencies in the quality of primary care or implicates other system-level issues such as long waiting times (World Bank, 2019c). On average, nationally, over half (52%) of emergency service visits are considered "inappropriate" and not requiring emergency care. Among counties, the share of "inappropriate" emergency service visits varies from 16% to 80%. The counties with high utilization rates also seem to have a larger share of "inappropriate" care, pointing to potential areas for improvement (World Bank, 2019c).

With regard to the quality of hospital care, the standardized 30-day hospital mortality rate for acute myocardial infarction (AMI) is much higher than in most other EU countries, amounting to 11.6 per 100 hospitalizations in 2017, second after Latvia with 13.4, and compared to an EU-23 average of 6.8 (Figure 7.3).

The standardized 30-day hospital mortality rate for stroke shows a similar pattern, with mortality in Croatia being several times higher than in top-performing countries such as Denmark, Sweden and Norway (World Bank, 2019c).

**FIG. 7.3** In-hospital mortality rate (within 30 days of admission) for acute myocardial infarction



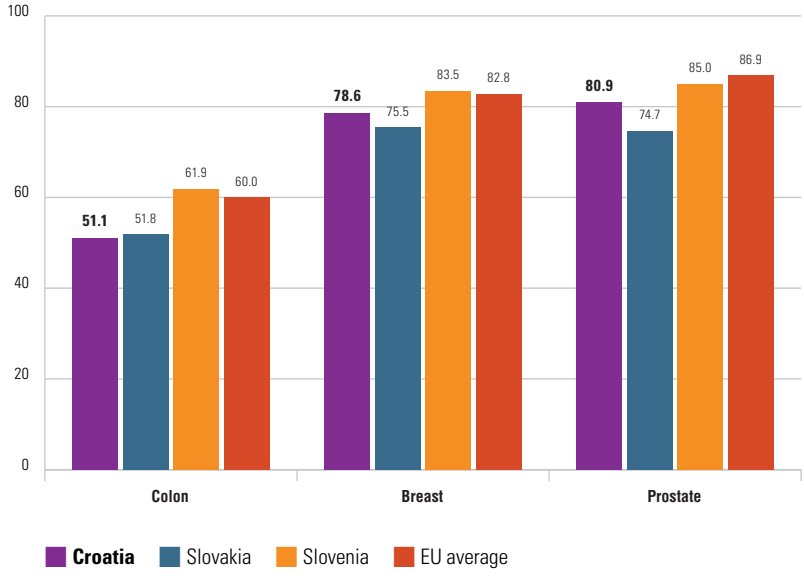

*Source:* OECD Health Statistics, 2019 (data refer to 2017 or nearest year).

*Note:* Figure is based on admission data and has been age–sex standardized to the 2010 OECD population aged 45+ admitted to hospital for AMI.

The reported 30-day AMI and stroke hospital re-admission rates in Croatia are surprisingly low compared to selected other countries. For example, 30-day re-admission rates for stroke in Croatia are about one eighth of those reported in the United States and re-admission rates for AMI are about one seventh of those reported for the United Kingdom. These low rates might indicate variations in how the data are defined and collected across countries. There are also substantial variations across hospitals in Croatia (World Bank, 2019c).

Five-year cancer survival rates for prostate, breast, colon and lung cancer are below the EU average (Figure 7.4). Between 2000–04 and 2010–14 five-year net survival following diagnosis of lung cancer increased from 11.5% to 14.9% on average across EU countries, with all EU countries achieving progress except Croatia, where the rate declined from 11.2% to 10.0%. However, survival rates in Croatia between 2000–04 and 2010–14 increased from 47.3% to 51.1% for colorectal cancer, from 73.6% to 78.6% for breast cancer and from 65.7% to 80.9% for prostate cancer.

**FIG. 7.4** Five-year cancer survival rates for colon, breast and prostate cancer in Croatia and selected countries




*Source:* Allemani et al., 2018.

*Note:* Data refer to people diagnosed between 2010 and 2014.

## 7.5 Health system outcomes

There is no system in place for monitoring health system outcomes. The performance of the health system is most often evaluated through some general mortality rates. However, since it is sometimes difficult to interpret these rates, misinterpretations are possible. Furthermore, in the absence of a quality control system, the quality of some of the data is questionable, and, when used in isolation, some indicators can provide an incorrect picture of the overall system. These problems are discussed extensively in the strategic planning document prepared by the World Bank Working Group in 2019 (World Bank, 2019c).

Life expectancy at birth has improved over time and is similar to that in other EU-13 countries, but still below the average for EU-15 countries (see Chapter 1). However, healthy life expectancy in Croatia is far below the averages for both the EU-13 and EU-15 countries (World Bank, 2019c).

Several specific mortality rates are among the highest in the EU. The age-standardized cancer mortality rate, for example, is the second highest among all EU countries, and one third higher than the EU-15 average. Cancer mortality in Croatia has declined little in recent years, with much larger reductions in other EU countries, resulting in a growing mortality gap (World Bank, 2019c). The national cancer plan noted in 2018 that the high rates in Croatia are due to a number of factors, including exposure to harmful influences (primarily smoking and obesity), a lack of high-quality primary prevention programmes, low health awareness, insufficient early detection programmes, late diagnosis, a higher share of more fatal forms of cancer, poor availability of high-quality cancer care, a lack of radiotherapy and other expensive and sophisticated equipment, a lack of a multidisciplinary approach in oncology, insufficient oncology databases and quality control, and insufficient investment in all aspects of oncology, from science and education to treatment and supportive symptomatic care for cancer patients (Republic of Croatia, 2020a). The National Strategic Framework Against Cancer 2021–2030 was adopted in December 2020.

## Mortality from amenable causes

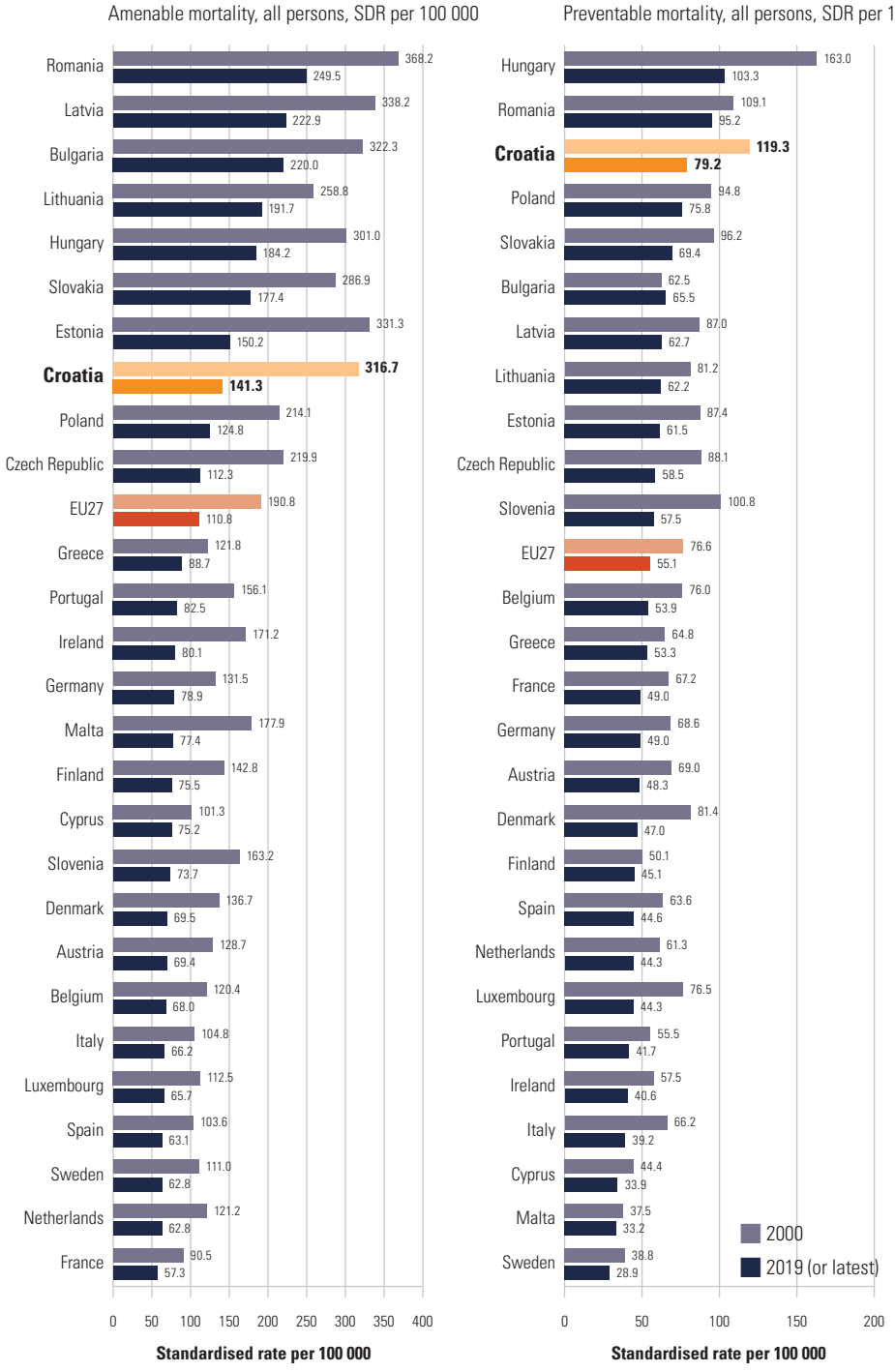
Croatia's mortality rates from amenable causes (deaths which should not occur if people have access to timely and effective health care) are very high and well above the EU average (141 compared to 111 per 100 000 population), but have declined since 2011 (Figure 7.5). As with mortality from preventable causes, cardiovascular diseases play a big role, accounting for 42% of deaths that could be avoided through timely and appropriate treatment. Colorectal and breast cancer also contribute substantially, making up a further 26% of deaths from amenable causes.

## Preventable mortality

Mortality from preventable causes (deaths which could have been avoided by public health interventions, including lung cancer, alcohol-related causes and road traffic deaths) in Croatia was the third highest in the EU in 2017 and well above the EU average (79 compared to 55 per 100 000) (Figure 7.5). This high rate points to underdeveloped intersectoral policies to address key determinants of ill-health, such as smoking, alcohol consumption and road traffic deaths.

Anti-smoking policies in Croatia are still weak, with a lack of smoke-free places (indoor smoking is allowed in some bars) and underdeveloped media campaigns against tobacco use. There is anti-tobacco legislation (such as the 2017 Act on Restrictions on the Use of Tobacco and Related Products), but evaluations or outcome data of national strategies or interventions are not available. Deaths from alcohol-related causes and transport accidents also exceed the EU average.

**FIG. 7.5** Preventable and amenable mortality in Croatia and European countries, 2000 and 2019 or latest available year




*Sources:* Mortality and population data from WHO detailed mortality files (released June 2021); Amenable causes as per list by Nolte and McKee (2004); preventable causes: lung cancer, chronic liver disease, road traffic deaths.

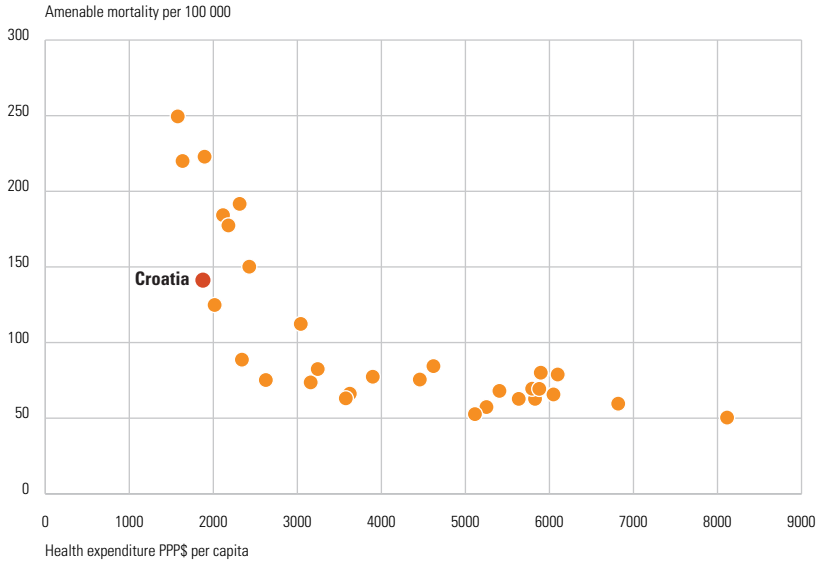
Poor nutrition (not reflected in Figure 7.5 on preventable mortality) is another concern. An estimated 59.6% of the population was overweight or obese in 2015–2017, which was slightly higher than the EU-28 average of 59.0%. Childhood obesity is of particular concern, with 35.0% of 8-year-olds in 2015–2017 being overweight or obese, compared to an EU-28 average of 29.2%. This was the fifth highest rate among countries of the WHO European Region for which data were available (World Bank, 2019c).

Air pollution is another challenge. Premature mortality due to air pollution from PM2.5 and ozone (not reflected in Figure 7.5 on preventable mortality) is high in Croatia, exceeding 120 crude deaths per 100 000 population in 2018, the fourth highest rate in EEA countries, after Bulgaria, Hungary and Romania. Taking into account the impact on mortality, lower quality of life for people falling sick because of air pollution, lower labour productivity and higher health spending, the total welfare losses from air pollution from PM2.5 and ozone amounted to a loss of 9.4% of GDP in Croatia in 2017, compared to 4.9% of the total EU GDP (OECD/European Union, 2020).

## 7.6 Health system efficiency

Health system efficiency is not monitored systematically in the Croatian health system. There are some limited studies (Voncina, Dzakula & Mastilica, 2007; Jafarov & Gunnarsson, 2008; Šiško & Šiško, 2017), but their results need to be treated with caution due to the limited availability and quality of data. Furthermore, these studies are related to selected segments of care, not whole processes, so possibilities for interventions that would increase efficiency are limited to the particular part of the health sector that is targeted. Examples are the low efficiency in the implementation of programmes for the prevention and treatment of cancer, the high rates of amenable mortality and large regional disparities in the use of emergency medicine, all indicating that there may be more efficient ways of using existing resources. Considering levels of amenable mortality in relation to health expenditure per capita (Figure 7.6), Croatia is doing reasonably well, with several countries having higher levels of amenable mortality despite similar or higher levels of expenditure.

**FIG. 7.6** Amenable mortality per 100 000 population versus health expenditure per capita, 2018 or latest available year




*Sources:* WHO, 2021a; WHO mortality data.

## Allocative efficiency

The breakdown of health expenditure by health service functions indicates scope for improved allocative efficiency. In 2019 Croatia spent 29.5% of its expenditure on inpatient curative and rehabilitative care, which was slightly above the EU-27 average of 29.1%. Expenditure on outpatient care (consisting of primary care and specialist outpatient care mostly provided by hospital outpatient departments) accounted for 37.9%, which was above the EU-27 average of 29.5%. While this suggests a high level of allocative efficiency, with outpatient care receiving a higher share of health expenditure than more costly inpatient care, it is noteworthy that hospitals are an important provider of outpatient services, receiving 47.4% of overall health expenditure for both inpatient and outpatient services in 2018, compared to an EU-27 average of 36.4% (Eurostat, 2021). Shifting more services to primary care settings while maintaining levels of care would help to improve allocative efficiency.

Croatia spends a larger share of its health expenditure on pharmaceuticals and medical devices than many other EU countries, accounting for 22.8% in 2019, compared to an EU-27 average of 18.4%. While this is in absolute

terms below the EU average per capita, there seems to be scope for cost savings. The country has started to address this issue with policies aimed to curb pharmaceutical expenditure by changes to pricing and reimbursement (see Sections 2.7.6 and 5.5).

In contrast, spending on long-term care only made up 3.1% of health expenditure in Croatia in 2019, much lower than the EU-27 average of 16.3%. Formal long-term care is still underdeveloped and mostly provided in institutional settings. On the other hand, spending on preventive services was 3.0% of expenditure, marginally higher than the EU-27 average of 2.9% (Eurostat, 2021).

Challenges to improved allocative efficiency include a continued emphasis on hospital care and deficiencies in primary care. Reforms of the hospital sector have been planned for some time, but so far implementation has been lacking. There is also a relatively high number of specialist doctors compared to family doctors (Bobinac, 2017). Allocative efficiency is further limited by the way the system is organized and managed because the main driver in planning the allocation of resources is the national public health service network, not the need for greater efficiency.

## Technical efficiency

Technical inefficiencies (a poor level of outputs given the quantity of inputs) exist in both hospital and primary care. The hospital payment system has been reformed in recent years, but hospitals remain prone to the accumulation of arrears, as spending limits are not sufficiently aligned with types and amounts of services provided (European Commission, 2019a).

The inpatient average length of stay has been gradually decreasing, from 9.5 days in 2010 to 8.2 days in 2018, but remains above the EU-13 and EU-15 averages (Eurostat, 2021). This suggests that hospital stays might be longer than clinically needed and that there might be scope for more efficient provision of costly inpatient services. The curative care bed occupancy rate stood at 74.8% in 2018 (Eurostat, 2021). This rate is broadly in line with bed occupancy rates in many other European countries.

Moreover, the high utilization of costly emergency care services for non-emergency conditions suggests deficiencies in the quality of primary care or other system-level issues such as long waiting times. Over half (52%) of all emergency visits in Croatia in 2017 were conducted for non-emergency

conditions, with wide variations in values between counties, ranging from 16% to 80% (World Bank, 2019c).

Although there is no systematic monitoring of measures to improve efficiency, there are some positive examples. One is the increase in day surgery, which improved the efficiency of the hospital sector. The share of cataract surgeries performed in an outpatient setting increased from 0% in 2013 to 70% in 2017. However, many other eligible procedures are still predominantly provided in a more resource-intensive inpatient setting (World Bank, 2019c).

The increasing use of modern information technologies and e-health solutions has significantly improved existing care processes, and made it easier for health workers to access information and for patients to access care. E-prescriptions have been successfully introduced and are fully operational (European Commission, 2019a). Similarly, the introduction of an integrated model of palliative care and the role of the palliative care coordinator has significantly improved the use of existing resources and the availability of this type of care for more citizens. The further development of HTA could be another important means of improving technical efficiency, as it helps to determine whether prices of health interventions reflect their benefits to patients.

# 8

# Conclusions

Prior to the onset of the COVID-19 pandemic in 2020 the Croatian health system had made important progress towards improving the health of the population. Almost the entire population has access to a broad range of publicly paid services. Private out-of-pocket payments are relatively low and the country has achieved high levels of financial protection. However, there are geographical barriers, as well as long waiting times, impeding the accessibility of health services, which are likely to have increased as a result of the COVID-19 pandemic.

In addition to COVID-19 infections, the health system is faced with high levels of mortality from preventable and amenable causes. Available information on quality of care suggests that there is much scope for improvement. The standardized 30-day hospital mortality rate for acute myocardial infarction (AMI) is much higher than in most other EU countries. Improving quality of care is an explicit policy aim, but a comprehensive quality improvement strategy with an action plan that defines priorities, performance indicators and responsibilities is currently missing.

Preventable causes of death (including lung cancer, alcohol-related causes and road traffic deaths) and air pollution are among the highest in the EU. Anti-tobacco policies are weak, indoor smoking in public places is still widespread, and there are comparatively high rates of teenage smoking. Obesity rates are rising too, in particular among children.

Challenges to an improved allocation of resources include a continued emphasis on hospital care and deficiencies in primary care, while technical inefficiencies exist in both hospital and primary care. Primary care is fragmented and seems to be underutilized compared to hospital care and care provided by hospital outpatient departments. Another challenge is the provision of primary care in rural areas and on the country's islands, due to a shortage of primary care physicians.

The COVID-19 pandemic provides an added incentive to accelerate health reforms, step up public health policies and improve the sustainability of the health system. There are some areas where progress has been achieved, such as in e-health, with electronic referrals becoming more common and primary care consultations being conducted remotely. However, it is unclear whether these interventions could prevent an increase in unmet needs.

The National Development Strategy for 2020–2030 that was adopted in February 2021 has the strategic goals of improving the health of citizens throughout their lifecourse, and improving access to and quality of health services and creating an efficient health system. This strategy might provide the required framework for accelerating reforms of hospital and primary care and improving quality of care. There are also new national strategies that could help to step up action against preventable causes of death, including the National Strategic Framework against Cancer until 2030, the Action Plan for Prevention and Control of Chronic Non-Communicable Diseases for 2020–2026, and the National Strategy to Combat Addiction for 2021–2030. These could help to make the Croatian health system more resilient to deal with future challenges.

# 9

# Appendices

## 9.1 References


Allemani CT et al. (2018). Global surveillance of trends in cancer survival 2000–14 (CONCORD-3): analysis of individual records for 37 513 025 patients diagnosed with one of 18 cancers from 322 population-based registries in 71 countries. *Lancet,* 391(10125):1023–75.

Babacanli A, Balen I, Brechelmacher A, Dodig D, Đula K, Gulić S, Hostić V et al. (2016). [Satisfaction of young doctors in Croatia: are we heading in the right direction?] [Article in Croatian]. *Lijec Vjesn.*, 138(7–8):179–88.

Bobinac A (2017). Access to health services in Croatia: Policy report. Zagreb: Centre for Peace Studies. Available at: https://www.cms.hr/system/publication/pdf/95/Pristup_zdravstvenim_uslugama_u_Hrvatskoj_.pdf (accessed 10 December 2020).

Bodiroga-Vukobrat N (2013). Country Document 2013: pensions, health care and long-term care – Croatia, November 2013. Analytical support on social protection reforms and their socio-economic impact. Luxembourg: GVG on behalf of the European Commission DG Employment, Social Affairs and Inclusion.

Brekalo M (2017). Priority waiting lists introduced, therapy within a month. N1 news channel, 26 June 2017. Available at: http://hr.n1info.com/Vijesti/a214589/Uvedene-prioritetne-liste-cekanja-u-mjesec-dana-do-terapije.html (accessed 19 June 2020).

CHIF (2013). CHIF guide for the new revenue model for primary health care. Zagreb: Croatian Health Insurance Fund. Available at: http://www.cezih.hr/dokumenti/HZZO_Vodic_kroz_ponudu_NM_za_OM_v19012013.pdf (accessed 12 May 2020).

CHIF (2014). CHIF exits state treasury on January 1st, 2015. Zagreb: Croatian Health Insurance Fund. Available at: https://www.hzzo.hr/izlazak-hzzo-a-iz-drzavne-riznice-nuzan-je-preduvjet-stvaranja-boljeg-odgovornijeg-pametnijeg-i-odrzivog-zdravstvenog-sustava-za-sve-nas/ (accessed 17 May 2020).

CHIF (2019). Izvješće o poslovanju hrvatskog zavoda za zdravstveno osiguranje za 2018. godinu [Business report of the Croatian Health Insurance Fund for 2018]. Zagreb: Croatian Health Insurance Fund. Available at: https://www.hzzo.hr/wp-content/uploads/2019/05/Izvjesce_o_poslovanju_hzzo_za_2018._godinu.pdf (accessed 28 January 2020).

CHIF (2020a). Business Report of the Croatian Health Insurance Fund for 2019. Zagreb: Croatian Health Insurance Fund. Available at: https://hzzo.hr/wp-content/uploads/2020/07/IZVJE%C5%A0%C4%86E-O-POSLOVANJU-HZZO-a-za-2019.pdf (accessed 12 February 2021).

CHIF (2020b). CHIF for e-Citizens. Zagreb: Croatian Health Insurance Fund. Available at: https://www.hzzo.hr/e-gradani/hzzo-za-e-gradane/ (accessed 18 June 2020).

CHIF (2020c). Number of orders on the list of orders by institution – first diagnostic and therapeutic procedures. Zagreb: Croatian Health Insurance Fund. Available at: http://www.hzzo-net.hr/dload/eListe/Broj_pacijenata_na_listi_narudzbi_po_ustanovama_prvi_pregledi_dijag_ter_postupaka.html (accessed 4 December 2020).

CHIF (2021). Broj narudžbi na listi narudžbi po ustanovama – Prvi dijagnostički i terapijski postupci [Number of orders by institutions – first diagnostic and therapeutic procedures]. Zagreb: Croatian Health Insurance Fund. Available at: http://www.hzzo-net.hr/dload/eListe/Broj_pacijenata_na_listi_narudzbi_po_ustanovama_prvi_pregledi_dijag_ter_postupaka.html (accessed 12 February 2021).

CIPH (2020a). Croatian Health Statistics Yearbook 2019. Zagreb: Croatian Institute of Public Health. Available at: https://www.hzjz.hr/wp-content/uploads/2021/02/Ljetopis_Yerabook_2019.pdf (accessed 24 May 2021).

CIPH (2020b). Croatian National Cancer Registry, cancer incidence in Croatia 2017. Zagreb: Croatian Institute of Public Health, *Bulletin,* 42. Available at: https://www.hzjz.hr/wp-content/uploads/2017/01/Bilten-2017-final.pdf (accessed 5 October 2020).

Croatian Bureau of Statistics (2018). 2018 Statistical Yearbook of the Republic of Croatia. Zagreb: Croatian Bureau of Statistics.

Croatian Bureau of Statistics (2019). Population estimate of Republic of Croatia, 2018. Zagreb: Croatian Bureau of Statistics. Available at: https://www.dzs.hr/Hrv_Eng/publication/2019/07-01-03_01_2019.htm (accessed 28 January 2020).

Croatian Institute of Public Health (2019). Croatian Health Statistics Yearbook 2018. Zagreb: Croatian Institute of Public Health. Available at: https://www.hzjz.hr/wp-content/uploads/2019/10/Ljetopis_Yearbook_2018-1.pdf (accessed 9 April 2020).

Croatian Medical Chamber (2016). Anketa HLK-a: Čak 60 posto mladih liječnika aktivno razmišlja o odlasku iz Hrvatske [HLK survey: As many as 60 per cent of young doctors are actively considering leaving Croatia]. Zagreb: Croatian Medical Chamber. Available at: https://www.hlk.hr/EasyEdit/UserFiles/priopćenja/priopcenje-anketa-mladi-lijecnici.pdf (accessed 12 February 2021).

Croatian Medical Chamber (2020). Digital atlas of Croatian medical doctors. Zagreb: Croatian Medical Chamber. Available at: https://www.hlk.hr/digitalni-atlas-hrvatskog-lijecnistva.aspx (accessed 15 December 2020).

Džakula A (2005). Health care based on priorities is lost in decentralisation. *BMJ,* 331(7510):235.

Džakula A, Sagan A, Pavić N, Lončarek K, Sekelj-Kauzlarić K (2014). Croatia: Health system review. *Health Systems in Transition,* 16(3):1–162.

European Commission (2019a). 2019 European Semester: assessment of progress on structural reforms, prevention and correction of macroeconomic imbalances, and results of in-depth reviews under Regulation (EU) No 1176/2011. Brussels: European Commission.

European Commission (2019b). Country Report Croatia 2019. Including an in-depth review on the prevention and correction of macroeconomic imbalances. Brussels: European Commission. Available at: https://ec.europa.eu/info/sites/info/files/file_import/2019-european-semester-country-report-croatia_en.pdf (accessed 28 January 2020).

European Commission (2019c). Croatia: health care and long-term care systems. Joint report on health care and long-term care systems and fiscal sustainability. Country Documents 2019 Update. Luxembourg: Publications Office of the European Union. Available at: https://ec.europa.eu/info/sites/info/files/economy-finance/ip105_en.pdf (accessed 9 December 2020).

European Commission (2019d). Special Eurobarometer 502. Brussels: European Commission. Available at: file:///C:/Users/Bernd/Documents/2021/Croatia%20HiT/ebs_502_fact_hr_en.pdf (accessed 27 July 2021).

Eurostat (2021). Eurostat database. Brussels: Eurostat. Available at: https://ec.europa.eu/eurostat/data/database (accessed 11 September 2021).

Government of the Republic of Croatia (2019). The introduction of priority waiting lists solved the rapid care of patients with serious health conditions. Zagreb: Government of the Republic of Croatia. Available at: https://vlada.gov.hr/vijesti/uvodjenjem-prioritetnih-lista-narucivanja-rijeseno-brzo-zbrinjavanje-pacijenata-ozbiljnog-zdravstvenog-stanja/2526510 (accessed 19 June 2020).

HALMED (2019). Potrošnja lijekova u Hrvatskoj 2014–2018 [Pharmaceutical consumption in Croatia 2014–2018]. Zagreb: Agency for Medicinal Products and Medical Devices (HALMED). Available at: http://www.halmed.hr/fdsak3jnFsk1Kfa/publikacije/Potrosnja-lijekova-u-Hrvatskoj-2014-2018.pdf (accessed 18 March 2020).

Jafarov E, Gunnarsson V (2008). Government spending on health care and education in Croatia: efficiency and reform options. IMF Working Paper No. 08/136. Washington: International Monetary Fund. Available at: https://ssrn.com/abstract=1154295 (accessed 13 January 2021).

Loncarek K, Dzakula A, Mardetko R, Sagan A (2018). Origins and effects of the 2014–2016 national strategy for palliative care in Croatia. *Health Policy,* 122(8):808–14.

Ministry of Demography, Family, Youth and Social Policy, (2019a). Godišnje statističko izvješće o domovima i korisnicima socijalne skrbi 2018 [Annual statistical report on homes and beneficiaries of social welfare in the Republic of Croatia in 2018]. Zagreb: Ministry of Demography, Family, Youth and Social Policy. Available at: https://mrosp.gov.hr/UserDocsImages/dokumenti/MDOMSP%20dokumenti/Godisnje%20statisticko%20izvjesce%20o%20domovima%20i%20korisnicima%20socijalne%20skrbi%202018.pdf (accessed 24 May 2021).

Ministry of Demography, Family, Youth and Social Policy (2019b). Godišnje statističko izvješće o drugim pravnim osobama koje obavljaju djelatnost socijalne skrbi 2018 [Annual statistical report on other legal entities performing social welfare activities 2018]. Zagreb: Ministry of Demography, Family, Youth and Social Policy. Available at: https://mrosp.gov.hr/UserDocsImages/dokumenti/MDOMSP%20dokumenti/Godišnje%20statisticko%20izvješće%20o%20drugim%20pravnim%20osobama%20koje%20obavljaju%20djelatnost%20socijalne%20skrbi%202018..pdf (accessed 24 May 2021).

Ministry of Health (2012). National Health Care Strategy 2012–2020. Zagreb: Ministry of Health. Available at: https://zdravlje.gov.hr/UserDocsImages/dokumenti/Programi,%20projekti%20i%20strategije/Nacionalna%20strategija%20zdravstva%20-%20za%20web.pdf (accessed 21 December 2020).

Ministry of Health (2016). Nacionalni program ranog otkrivanja slabovidnosti [National programme for early detection of amblyopia]. Zagreb: Ministry of Health. Available at: https://zdravlje.gov.hr/UserDocsImages//Programi%20i%20projekti%20-%20Ostali%20programi//NACIONALNI%20PROGRAM%20RANOG%20OTKRIVANJA%20SLABOVIDNOSTI.pdf (accessed 4 February 2021).

Ministry of Health (2018a). European Social Fund Operational Programme Effective Human Resources 2014–2020. Limited call for grants 'Specialist training of doctors of medicine' UP.02.2.1.02. Zagreb: Ministry of Health. Available at: https://zdravlje.gov.hr/europski-socijalni-fond-operativni-program-ucinkoviti-ljudski-potencijali-2014-2020-ograniceni-poziv-na-dodjelu-bespovratnih-sredstava-specijalisticko-usavrsavanje-doktora-medicine-up-02-2-1-02/3193 (accessed 18 June 2020).

Ministry of Health (2018b). Nacionalni plan razvoja kliničkih bolničkih centara, kliničkih bolnica, klinika i općih bolnica u Republici Hrvatskoj 2018–2020 [National development plan for university hospital centres, university hospitals, clinics and general hospitals for 2018–2020]. Zagreb: Ministry of Health. Available at: https://zdravlje.gov.hr/UserDocsImages/2018%20Programi%20i%20projekti/Nacionalni_plan_razvoja_KBC_KB_KL_OB_2018_2020.pdf (accessed 29 January 2020).

Ministry of Health (2020a). Nacionalni program za probir i rano otkrivanje raka pluća 2020–2024. [National screening and early detection programme for lung cancer, 2020–2024]. Zagreb: Ministry of Health. Available at: https://zdravlje.gov.hr/UserDocsImages/2020%20Vijesti/NACIONALNI%20PROGRAM%20PREVENCIJE%20RAKA%20PLUĆA.pdf (accessed 9 April 2020).

Ministry of Health (2020b). Priority patients referral. Zagreb: Ministry of Health. Available at: https://zdravstvo.gov.hr/prioritetno-narucivanje-pacijenata/3118 (accessed 7 September 2020).

Ministry of Health (2020c). Racionalizacija potrošnje lijekova [Rationalization of pharmaceutical consumption]. Zagreb: Ministry of Health. Available at: https://zdravlje.gov.hr/istaknute-teme/financijska-konsolidacija-zdravstvenog-sustava/racionalizacija-potrosnje-lijekova/2623 (accessed 9 April 2020).

Miroslav Krleza Institute of Lexicography (2020). Croatia EU, Land and People, Political organization. Zagreb: Miroslav Krleza Institute of Lexicography. Available at: http://croatia.eu/index.php?view=category&lang=2&id=14 (accessed 5 October 2020).

Nolte E, McKee MC (2004). *Does health care save lives? Avoidable mortality revisited*. London: Nuffield Trust.

OECD/European Observatory on Health Systems and Policies (2019). State of Health in the EU. Croatia Country Health Profile 2019. Brussels, OECD and World Health Organization (acting as the host organization for, and secretariat of, the European Observatory on Health Systems and Policies).

OECD/European Observatory on Health Systems and Policies (2021). State of Health in the EU. Croatia Country Health Profile 2021. Brussels, OECD and World Health Organization (acting as the host organization for, and secretariat of, the European Observatory on Health Systems and Policies).

OECD/European Union (2020). Health at a Glance: Europe 2020: State of Health in the EU Cycle. Paris: OECD Publishing. Available at: https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-europe-2020_82129230-en (accessed 10 December 2020).

Oliveira Hashiguchi T, Llena-Nozal A (2020). The effectiveness of social protection for long-term care in old age: Is social protection reducing the risk of poverty associated with care needs? OECD Health Working Papers. Paris: OECD Publishing.

Ostojić R, Bilas V, Franc S (2012). Unapređenje kvalitete zdravstvenih sustava zemalja članica Europske unije i Republike Hrvatske [Improving the quality of health systems in the member states of the European Union and the Republic of Croatia]. *Poslovna izvrsnost Zagreb [Business excellence Zagreb],* 6(2):109–25.

Poslovni dnevnik (2015). A new model of contracting and financing of hospitals, 21 November 2015. Zagreb: Poslovni dnevnik. Available at: https://www.poslovni.hr/promo/novi-model-ugovaranja-i-financiranja-bolnickih-zdravstvenih-ustanova-303520 (accessed 8 September 2020).

Republic of Croatia (2004). Patient Rights Protection Act. Zagreb: Republic of Croatia. Available at: https://www.zakon.hr/z/255/Zakon-o-za%C5%A1titi-prava-pacijenata (accessed 4 February 2021).

Republic of Croatia (2013). Mandatory Health Insurance Act. Zagreb: Republic of Croatia. Available at: https://www.zakon.hr/z/192/Zakon-o-obveznom-zdravstvenom-osiguranju (accessed 4 February 2021).

Republic of Croatia (2019a). Act on Data and Information in Health Care. Zagreb: Republic of Croatia. Available at: https://www.zakon.hr/z/1883/Zakon-o-podacima-i-informacijama-u-zdravstvu (accessed 8 September 2020).

Republic of Croatia (2019b). Act on Quality of Health Care. Zagreb: Republic of Croatia. Available at: https://www.zakon.hr/z/1763/Zakon-o-kvaliteti-zdravstvene-zaštite (accessed 8 September 2020).

Republic of Croatia (2019c). Health Care Act. Zagreb: Republic of Croatia. Available at: https://narodne-novine.nn.hr/clanci/sluzbeni/2018_11_100_1929.html (accessed 8 September 2020).

Republic of Croatia (2020a). National cancer control plan 2020–2030. Zagreb: Republic of Croatia. Available at: https://www.nppr.hr/wp-content/uploads/2020/01/NPPR_ENG_final.pdf (accessed 10 December 2020).

Republic of Croatia (2020b). Voluntary Health Insurance Act. Zagreb: Republic of Croatia. Available at: https://www.zakon.hr/z/792/Zakon-o-dobrovoljnom-zdravstvenom-osiguranju (accessed 10 December 2020).

Republic of Croatia (2021). National Development Strategy of the Republic of Croatia until 2030. Zagreb: Republic of Croatia. Available at: https://narodne-novine.nn.hr/clanci/sluzbeni/2021_02_13_230.html (accessed 18 May 2021).

Šiško I, Šiško N (2017). Prevention programmes for early detection of breast cancer in Croatia. *Sestrinski glasnik,* 22(2):107–10.

Slot B, de Swart L, Weistra K, Oorttwijn W, van Wanrooij N, Raets T (2017). Updated study on corruption in the healthcare sector. Final report. Brussels: European Commission. Available at: https://ec.europa.eu/home-affairs/sites/homeaffairs/files/20170928_study_on_healthcare_corruption_en.pdf (accessed 4 February 2021).

Stubbs P, Zrinščak S (2018). ESPN Thematic report on challenges in long-term care. Croatia. Brussels: European Commission. Available at: https://ec.europa.eu/social/BlobServlet?docId=19841&langId=en (accessed 19 March 2020).

Tomic D (2019). Central management system for more efficient health system management presented. Zagreb: ICT Business. Available at: https://www.ictbusiness.info/poslovna-rjesenja/predstavljen-centralni-upravljacki-sustav-za-ucinkovitije-upravljanje-zdravstvenim-sustavom (accessed 8 September 2020).

Uhernik AI, Vuletic S, Kern J, Deckovic-Vukres V, Mihel S, Erceg M et al. (2012). The Croatian Adult Health Cohort Study (CroHort) – background, methodology and perspectives. *Collegium Antropologicum,* 36(Suppl 1):3–7.

United Nations (2008). Map of Croatia. New York: United Nations Department of Peacekeeping Operations, Cartographic Section. Available at: https://www.un.org/Depts/Cartographic/map/profile/croatia.pdf (accessed 7 September 2020).

Vlak T, Soso D, Poljicanin A, Becir B, Marinovic I, Pivalica D (2013). Physical and rehabilitation medicine training centre in Split, Croatia: striving to achieve excellence in education of a rehabilitation team. *Disability and Rehabilitation,* 36(9):781–6. Available at: http://neuron.mefst.hr/docs/katedre/fizikalna_med_rehab/Vlak2013.pdf (accessed 9 April 2020).

Vočanec D, Džakula A, Lončarek K, Sović S, Rechel B (2021). Integration processes within the Croatian palliative care model in 2014–2020. *Health Policy* (forthcoming).

Vogler S et al. (2011). Comparing pharmaceutical pricing and reimbursement policies in Croatia to the European Union Member States. *Croatian Medical Journal,* 52(2):183–97.

Vončina L, Arur A, Dorčić F, Pezelj-Duliba D (2018). Universal Health Coverage in Croatia: reforms to revitalize primary health care. Universal Health Care Coverage Series. Washington DC: World Bank Group.

Vončina L, Arur A, Somanathan A, Handanagić S (in press). Hospital arrears in Croatia from 2012 to 2016: health policy and political economy perspectives. Health, Nutrition and Population discussion paper. Washington DC: World Bank.

Vončina L, Dzakula A, Mastilica M (2007). Health care funding reforms in Croatia: a case of mistaken priorities. *Health Policy,* 80(1):144–57.

Vončina L, Rubil I (2018). Can people afford to pay for health care? New evidence on financial protection in Croatia. Copenhagen: WHO Regional Office for Europe.

Vončina L et al. (2012). Croatian 2008–2010 health insurance reform: hard choices toward financial sustainability and efficiency. *Croatian Medical Journal,* 53(1):66–76.

Vuletić S, Polasek O, Kern J, Strnad M, Baklaić Z (2009). Croatian Adult Health Survey – a tool for periodic cardiovascular risk factors surveillance. *Collegium Antropologicum,* 33:3–9.

WHO (2021a). Global Health Expenditure database. Geneva: World Health Organization. Available at: https://apps.who.int/nha/database/ViewData/Indicators/en (accessed 11 January 2021).
WHO (2021b). WHO Coronavirus (COVID-19) Dashboard. Geneva: World Health Organization. Available at: https://covid19.who.int (accessed 24 May 2021).
WHO Regional Office for Europe (2019). Can people afford to pay for health care? New evidence on financial protection in Europe. Copenhagen: WHO Regional Office for Europe. Available at: https://apps.who.int/iris/ handle/10665/311654 (accessed 18 February 2021).
World Bank (2014a). Croatia Programme-for-Results: improving quality and efficiency of health services. Washington DC: World Bank. Available at: https://openknowledge.worldbank.org/handle/10986/20077?show=full (accessed 22 December 2020).
World Bank (2014b). World Bank Supports Health of Croatians. Washington DC: World Bank. Available at: https://www.worldbank.org/en/news/press-release/2014/06/11/world-bank-supports-health-of-croatians (accessed 19 June 2020).
World Bank (2018). The Republic of Croatia, Systematic Country Diagnostic (P161992). Washington DC: International Bank for Reconstruction and Development (IBRD) Europe and Central Asia. 125443-HR. Available at: http://documents.worldbank.org/curated/en/452231526559636808/pdf/Croatia-SCD-clean-05142018.pdf (accessed 28 January 2020).
World Bank (2019a). Country Partnership Framework for the Republic of Croatia for the period FY19-FY24. Washington DC: World Bank.
World Bank (2019b). Implementation Status and Results Report, Health System Quality and Efficiency Improvement (P144871). Washington DC: World Bank.
World Bank (2019c). National Development Strategy Croatia 2030. Policy Note: Health Sector. Washington DC: World Bank. Available at: https://hrvatska2030.hr/wp-content/uploads/2020/10/Health-Sector.pdf (accessed 2 December 2020).
World Bank (2020). World Development Indicators database. Washington DC: World Bank. Available at: https://databank.worldbank.org/source/world-development-indicators# (accessed 7 September 2020).
World Bank (2021). World Development Indicators database. Washington DC: World Bank. Available at: https://databank.worldbank.org/source/world-development-indicators# (accessed 21 July 2021).
Župarić-Iljić D (2016). Emigration from the Republic of Croatia after the accession to the European Union. Zagreb: Friedrich Ebert Stiftung.

## 9.2 HiT methodology and production process

HiTs are produced by country experts in collaboration with the Observatory's research directors and staff. They are based on a template that, revised periodically, provides detailed guidelines and specific questions, definitions, suggestions for data sources and examples needed to compile reviews. While the template offers a comprehensive set of questions, it is intended to be used in a flexible way to allow authors and editors to adapt it to their particular national context. The latest version of the template (2019) is available on the Observatory website at https://eurohealthobservatory.who.int/publications/i/health-systems-in-transition-template-for-authors.

Authors draw on multiple data sources for the compilation of HiTs, ranging from national statistics, national and regional policy documents, to published literature. Furthermore, international data sources may be incorporated, such as those of the OECD and the World Bank. The OECD Health Data contain over 1200 indicators for the 34 OECD countries. Data are drawn from information collected by national statistical bureaux and health ministries. The World Bank provides World Development Indicators, which also rely on official sources.

In addition to the information and data provided by the country experts, the Observatory supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the European Health for All database. The Health for All database contains more than 600 indicators defined by the WHO Regional Office for Europe for the purpose of monitoring Health in All Policies in Europe. It is updated for distribution twice a year from various sources, relying largely upon official figures provided by governments, as well as health statistics collected by the technical units of the WHO Regional Office for Europe. The standard Health for All data have been officially approved by national governments.

HiT authors are encouraged to discuss the data in the text in detail, including the standard figures prepared by the Observatory staff, especially if there are concerns about discrepancies between the data available from different sources.

A typical HiT consists of nine chapters.

1. Introduction: outlines the broader context of the health system, including geography and sociodemography, economic and political context, and population health.
2. Organization and governance: provides an overview of how the health system in the country is organized, governed, planned and regulated, as well as the historical background of the system; outlines the main actors and their decision-making powers; and describes the level of patient empowerment in the areas of information, choice, rights and cross-border health care.
3. Financing: provides information on the level of expenditure and the distribution of health spending across different service areas, sources of revenue, how resources are pooled and allocated, who is covered, what benefits are covered, the extent of user charges and other out-of-pocket payments, voluntary health insurance and how providers and health workers are paid.

4. Physical and human resources: deals with the planning and distribution of capital stock and investments, infrastructure and medical equipment; the context in which IT systems operate; and human resource input into the health system, including information on workforce trends, professional mobility, training and career paths.
5. Provision of services: concentrates on the organization and delivery of services and patient flows, addressing public health, primary care, secondary and tertiary care, day care, emergency care, pharmaceutical care, rehabilitation, long-term care, services for informal carers, palliative care, mental health care and dental care.
6. Principal health reforms: reviews reforms, policies and organizational changes; and provides an overview of future developments.
7. Assessment of the health system: provides an assessment of systems for monitoring health system performance, the impact of the health system on population health, access to health services, financial protection, health system efficiency, health care quality and safety, and transparency and accountability.
8. Conclusions: identifies key findings, highlights the lessons learned from health system changes; and summarizes remaining challenges and future prospects.
9. Appendices: includes references and useful websites.

The quality of HiTs is of real importance since they inform policy-making and meta-analysis. HiTs are the subject of wide consultation throughout the writing and editing process, which involves multiple iterations. They are then subject to the following.

- A rigorous review process.
- There are further efforts to ensure quality while the report is finalized that focus on copy-editing and proofreading.
- HiTs are disseminated (hard copies, electronic publication, translations and launches).

The editor supports the authors throughout the production process and in close consultation with the authors ensures that all stages of the process are taken forward as effectively as possible.

One of the authors is also a member of the Observatory staff team and they are responsible for supporting the other authors throughout the writing and production process. They consult closely with one another to ensure that all stages of the process are as effective as possible and that HiTs meet the series standard and can support both national decision-making and comparisons across countries.

## 9.3 The review process

This consists of three stages. Initially the text of the HiT is checked, reviewed and approved by the series editors of the European Observatory. It is then sent for review to two independent academic experts, and their comments and amendments are incorporated into the text, and modifications are made accordingly. The text is then submitted to the relevant ministry of health or appropriate authority, and policy-makers within those bodies are restricted to checking for factual errors within the HiT.

## 9.4 About the authors

**Aleksandar Džakula** is Associate Professor at the Department of Social Medicine and Organization of Health Care of the Andrija Štampar School of Public Health, University of Zagreb, School of Medicine. He is the head of the Public Health Hub programme at the University of Zagreb, School of Medicine, which conducts applied research, develops policy and strategic documents, and interventions aimed at improving business processes in health care.

**Dorja Vočanec** is Research Assistant at the Department of Social Medicine and Organization of Health Care of the Andrija Štampar School of Public Health, University of Zagreb, School of Medicine.

**Maja Banadinović** is External Associate at the Public Health Hub programme at the Andrija Štampar School of Public Health, University of Zagreb, School of Medicine.

**Maja Vajagić** is Head of the Service for the Improvement of Health Services at the Croatian Health Insurance Fund. She is an associate on projects within the Public Health Hub programme.

**Karmen Lončarek** is Professor at the Ophthalmology Department of the University of Rijeka School of Medicine and Head of the Department of Palliative Medicine of the University Hospital Centre Rijeka.

**Iva Lukačević Lovrenčić** is Research Assistant at the Department of Social Medicine and Organization of Health Care of the Andrija Štampar School of Public Health, University of Zagreb, School of Medicine.

**Dagmar Radin** is Associate Professor at the Department of Public Policy, Management and Development of the Faculty of Political Science, University of Zagreb.

**Bernd Rechel** is Research Officer at the European Observatory on Health Systems and Policies, London School of Hygiene & Tropical Medicine, United Kingdom.

# The Health Systems in Transition Series

## A series of the European Observatory on Health Systems and Policies

The Health Systems in Transition (HiT) country reports provide an analytical description of each health system and of reform initiatives in progress or under development. They aim to provide relevant comparative information to support policy-makers and analysts in the development of health systems and reforms in the countries of the WHO European Region and beyond.

The HiTs are building blocks that can be used:

- to learn in detail about different approaches to the financing, organization and delivery of health services;
- to describe accurately the process, content and implementation of health reform programmes;
- to highlight common challenges and areas that require more in-depth analysis; and
- to provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policymakers and analysts in countries of the WHO European Region.

## How to obtain a HiT

All HiTs are available as PDF files at eurohealthobservatory.who.int where you can also join our listserve for monthly updates of the activities of the European Observatory on Health Systems and Policies, including new HiTs, books in our co-published series with Cambridge University Press, Policy briefs, Policy Summaries, and the Eurohealth journal.

If you would like to order a paper copy of a HiT, please contact us at: contact@obs.who.int

The publications of the European Observatory on Health Systems and Policies are available at **eurohealthobservatory.who.int**

# HiT Country Reviews Published to Date

**Albania**
(1999, 2002[a g])

**Andorra**
(2004)

**Armenia**
(2001[g], 2006, 2013)

**Australia**
(2002, 2006)

**Austria**
(2001[e], 2006[e], 2013[e], 2018)

**Azerbaijan**
(2004[g], 2010[g])

**Belarus**
(2008[g], 2013)

**Belgium**
(2000, 2007, 2010, 2020)

**Bosnia and Herzegovina**
(2002[g])

**Bulgaria**
(1999, 2003[b], 2007[g], 2012, 2018)

**Canada**
(2005, 2013[c], 2020)

**Croatia**
(1999, 2006, 2014)

**Cyprus**
(2004, 2012)

**Czech Republic**
(2000, 2005[g], 2009, 2015)

**Denmark**
(2001, 2007[g], 2012)

**Estonia**
(2000, 2004[g j], 2008, 2013, 2018)

**Finland**
(2002, 2008, 2019)

**France**
(2004[c g], 2010, 2015)

**Georgia**
(2002[d g], 2009, 2017)

**Germany**
(2000[e], 2004[e g], 2014[e], 2020)

**Greece**
(2010, 2017)

**Hungary**
(1999, 2004, 2011)

**Iceland**
(2003, 2014)

**Ireland**
(2009)

**Israel**
(2003, 2009, 2015)

**Italy**
(2001, 2009, 2014)

**Japan**
(2009)

**Kazakhstan**
(1999[g], 2007[g], 2012)

**Kyrgyzstan**
(2000[g], 2005[g], 2011[g])

**Latvia**
(2001, 2008, 2012, 2019)

**Lithuania**
(2000, 2013)

**Luxembourg**
(1999, 2015)

**Malta**
(1999, 2014, 2017)

**Mexico**
(2020)

**Mongolia**
(2007)

**Netherlands**
(2004[g], 2010, 2016)

**New Zealand**
(2001*)

**North Macedonia**
(2000, 2006, 2017)

**Norway**
(2000, 2006, 2013, 2020)

**Poland**
(1999, 2005[k], 2011, 2019)

**Portugal**
(1999, 2004, 2007, 2011, 2017)

**Republic of Korea**
(2009*)

**Republic of Moldova**
(2002[g], 2008[g], 2012)

**Romania**
(2000[f], 2008, 2016)

**Russian Federation**
(2003[g], 2011[g])

**Serbia**
(2019)

**Slovakia**
(2000, 2004, 2011, 2016)

**Slovenia**
(2002, 2009, 2016, 2021)

**Spain**
(2000[h], 2006, 2010, 2018)

**Sweden**
(2001, 2005, 2012)

**Switzerland**
(2000, 2015)

**Tajikistan**
(2000, 2010[g], 2016)

**Turkey**
(2002[g i], 2011[i])

**Turkmenistan**
(2000)

**Ukraine**
(2004[g], 2010[g], 2015)

**United Kingdom of Great Britain and Northern Ireland**
(1999[g], 2015)

**United Kingdom (England)**
(2011)

**United Kingdom (Northern Ireland)**
(2012)

**United Kingdom (Scotland)**
(2012)

**United Kingdom (Wales)**
(2012)

**United States of America**
(2013, 2020)

**Uzbekistan**
(2001[g], 2007[g], 2014[g])

**Veneto Region, Italy**
(2012)

All HiTs are available in English. When noted, they are also available in other languages:

- [a] Albanian
- [b] Bulgarian
- [j] Estonian
- [c] French
- [d] Georgian
- [e] German
- [k] Polish
- [f] Romanian
- [g] Russian
- [h] Spanish
- [i] Turkish

**The publications of the European Observatory on Health Systems and Policies are available at**

https://eurohealthobservatory.who.int/


The Observatory is a partnership, hosted by WHO/Europe, which includes other international organizations (the European Commission); national and regional governments (Austria, Belgium, Finland, Ireland, Norway, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the Veneto Region of Italy (with Agenas)); other health system organizations (the French National Union of Health Insurance Funds (UNCAM), the Health Foundation); and academia (the London School of Economics and Political Science (LSE) and the London School of Hygiene & Tropical Medicine (LSHTM)). The Observatory has a secretariat in Brussels and it has hubs in London (at LSE and LSHTM) and at the Berlin University of Technology.

HiTs are in-depth profiles of health systems and policies, produced using a standardized approach that allows comparison across countries. They provide facts, figures and analysis and highlight reform initiatives in progress.

Print ISSN 1817-6119 Web ISSN 1817-6127